



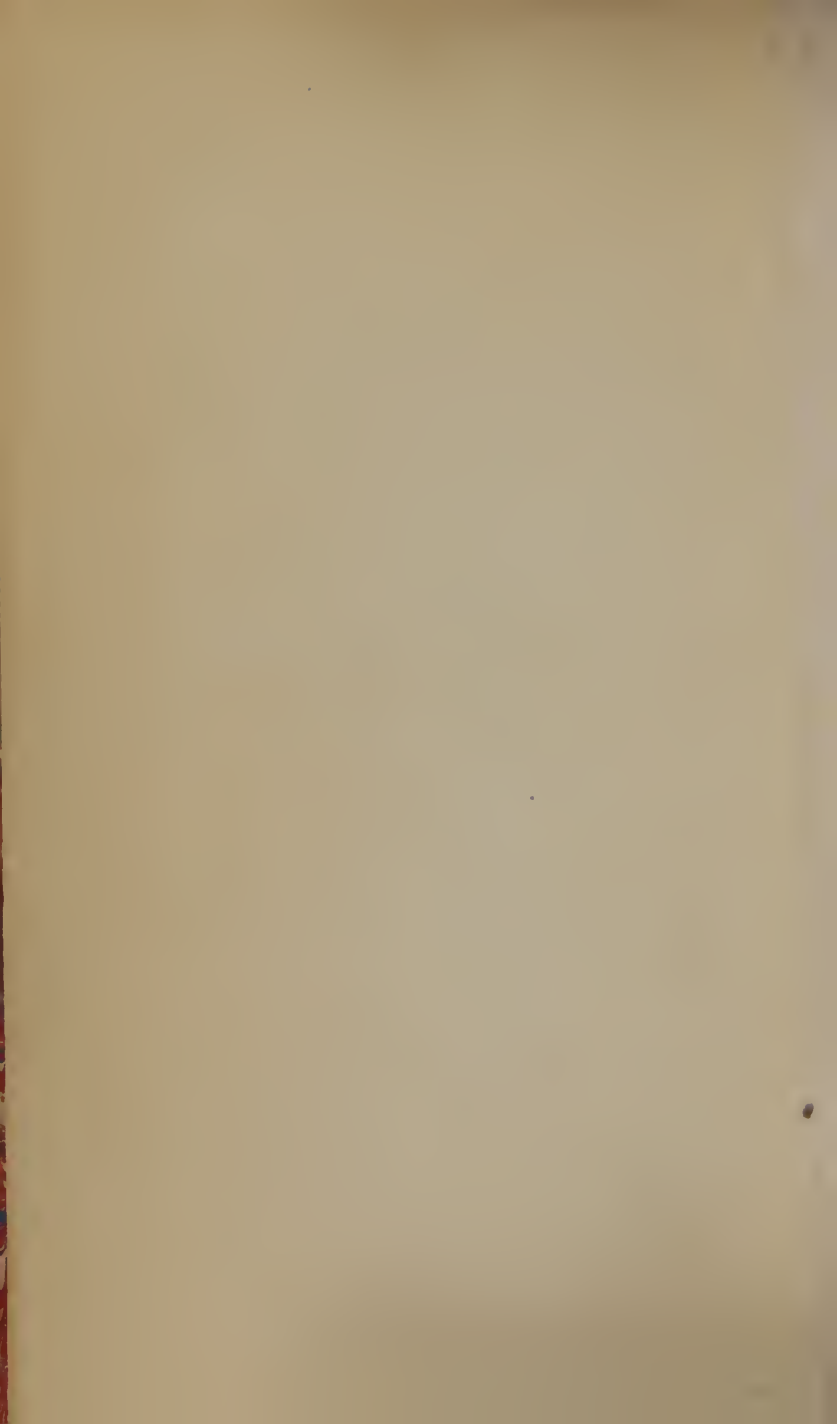
Surgeon General's Office

LIBRARY

Section,

No. 10942





WICK
014
1861

Film no. 10442, item 6

29 extracts from med.
Journals.

Observations on the yellow fever
(London 1722)

Hence it followed, that near the beginning of a storm, the ground not being saturated with moisture, part of a flash of lightning forsook the rod and shattered part of the adjoining fence, being solicited by the iron spikes that were on the top of the fence. As the attraction of those spikes must have been inconsiderable, for they did not communicate with the earth, except by dry wood, it is clear that the lightning would not have forsaken the rod, if it had terminated in moist clay.

The house of Mr. Maurice, in Savannah, like most other houses in that city, is built upon a body of silicious earth or white sand, which becomes dry in a few hours after a fall of rain. The iron rod, that was attached to his house, was inserted, as usual, a few inches into the sand. During a thunder gust, the sand being dry, the lightning forsook the rod and injured part of the furniture in the parlour. If the rod had been made to penetrate six or eight feet into the earth, as it should do in all such dry sandy ground, the furniture would have been perfectly safe.

A gentleman, some years ago, in a warm climate, complained to me that he had been considerably affected, in his parlour, by a flash of lightning, though his house was armed with an iron rod. Wishing, if possible, to discover the cause, I examined the rod and observed that the cattle had been licking away the earth, at the end of the house, so that the rod did not touch the ground by six inches. Such are the cases in which people complain that lightning rods do not discharge their duty.

It is conceived that the above observations may claim some attention in this city, because many houses, on this island, are built upon a rocky foundation, or upon coarse sand that retains little moisture. In all such cases particular care should be taken to have the rod inserted so deep into the earth, that it may terminate with certainty in moist ground.

HUGH WILLIAMSON.

II.

OBSERVATIONS *on the* SPOTTED FEVER, *as it appeared in* ORANGE COUNTY, *State of New-York, in* 1808 *and* 1809. *Communicated in a Letter from* Doctor DAVID R. ARNELL, *of Goshen, to* Dr. DAVID HOSACK, *Professor of Botany and Materia Medica, in Columbia College, New-York.*

DEAR SIR,

In compliance with your request, I now give you a history of the fever which prevailed in the town of Minisink some time since, and which proved so mortal among those it attacked. In doing this I shall take up the queries of your letter in the order which you have given them.

1st. What were the symptoms of the disease in its different stages ?

The patients affected were first taken with a cold chill or slight shivering, and almost at the same instant complained of pain in the limbs, back, and particularly in the

abdominal region ; head-ache, vertigo and coryza. This state lasted from ten to twenty minutes, when it was succeeded by a slight sensation of warmth on the surface of the body, sickness of stomach, vomiting, delirium, great anxiety and restlessness ; tossing in the bed, involuntary motions of the head, which appeared frequently to be drawn to one side ; mouth and tongue moist and clammy ; pulse a little sunk, sharp and quick. Blood drawn in this stage of the disease shewed no buffy coat nor any other morbid appearance : the matter vomited was saffron-coloured bile in large quantities, but without any diseased appearance. This state continued from twelve to fifteen hours, when petechiæ, about the size of split peas, but of irregular shape, appeared all over the surface of the body ; they looked like what are usually termed blood blisters, only they were not raised from a level with the surface, but were of a dark, livid colour. Anxiety and restlessness increased ; the colour of the skin was not changed, except where those spots appeared ; the countenance for the most part sunk, and the eyes drawn up in the head ; these symptoms continued to increase until a general comatose state was brought on, when death closed the scene.

2d. The general duration of the disease ; when the patient recovers, and when it proves fatal ?

	<i>Years.</i>		<i>Hours.</i>
A child of Phineas Terry	6	taken May 13th, 1808, died in	28
Jesse M ^c Whorter	22	Nov. 27th,	24
Miss Quick	17	29th,	24
Howel Roberts	10	Dec. 12th,	15
John Steward	16	May 19th, 1809,	48
Jeremiah Overton	26	25th,	72
Mrs. Eldred	24	June 12th, convalesc. in	24

3d. The persons it attacked, if natives or foreigners ? If in habits of temperance, or irregular in their manner of living ?

The persons it attacked were all natives of this country, and regular in their habits and manner of living.

4th. The state of the country in which it occurred, the time, the season, if dry or moist, the temperature, &c. ?

The town of Minisinck is bounded on the east by the great drowned lands, and the Wallkill, which circumstance renders the inhabitants liable to intermittent, remittent, and bilious fevers in the fall of the year ; but at the time these cases appeared it was remarkably healthy ; it being too early in the spring for inflammatory, and too late in the fall for bilious diseases. The spring was moist, and the autumn dry : temperature various.

5. The mode of treatment. Did they bear the lancet well ? What were the effects of *emetics* ? Did they throw up much bile ? What was the effect of mercury ? Did you employ the bark, and what were its general effects ?

In some cases blood was taken in the early stage of the disease, but it did not produce that desired good effect which was expected from it : the blood drawn appeared like that of a person in full health, no unusual buffy coat, neither was the crassamentum broken down or destroyed. A cathartic of jalap and calomel was next administered ; after the operation of which, I endeavoured to procure a sweat : this was attempted by warm herb teas, with spirits, and the common antimonial mixture ; but the time was so short, there was but little oppor-

tunity of doing any thing. Emetics were not tried. Much bile was thrown up during the short course of the disease. Mercury was used in the case of Mrs. Eldred with happy effect; but I believe it was not used to the same extent in any other case. Immediately after she was taken, she was bled by Dr. Nathaniel Elmer, her attending physician, who administered a dose of jalap and calomel: I saw her about three hours after she was taken, and advised the use of calomel very freely, which was persisted in, together with wine, for twelve hours. When the petechial spots made their appearance, which were of a bright red colour, the uneasy symptoms began to abate, and in about twenty-four hours she was entirely free from complaint, but remarkably low and exhausted. She was supported by wine and other stimulants, and had a speedy recovery.

6th. What proportion of those attacked died?

By reverting to the second query answered, you will find that six out of seven died.

7th. Did the disease commence with a chill, or shaking? Were they better or worse on alternate days? Were there regular remissions and manifest exacerbations?

The disease uniformly commenced with a chill, and latterly so as to induce violent shaking. There were no remissions or exacerbations.

8th. When it proved fatal, at what period did it take place? Was the skin yellow?

It generally proved fatal in about twenty-four hours, and the skin after death, for some distance around the spots, became dark coloured and livid, though on the other parts of the body it was not changed.

9th. Did patients manifest the same thirst and dryness of tongue as in other fevers?

The tongue and mouth were generally moist and clammy; the patients were so uniformly delirious a few hours after the attack, that we could learn nothing from them but by observation; but they did not appear to drink much when it was offered to them.

10th. Was the stomach affected in the last stages of the disease? Was the usual termination, when fatal, a *black vomit* resembling coffee grounds, or blood, or mere dirty water?

Although the stomach appeared to be affected through the first stages of the disease, yet it did not increase in the last. Most generally a stupid, comatose state appeared a few hours before death; the vomiting ceased, the extremities became cold, and the patient sunk away under a load of disease.—In no stage did the matter which they vomited appear like *coffee grounds*, or *blood*, or *mere dirty water*.

II.

OBSERVATIONS on the ORIGIN and NATURE of the YELLOW FEVER, which prevailed in Providence, Rhode Island, in the summer of 1805. In a letter to JAMES HARDIE, Esq. Secretary to the Board of Health, N. Y. from Dr. PARZEN BOWEN.*

Providence, August 28th, 1805.

SIR,

Your letter of the 3d instant, written by the direction of the Board of Health of the city of New-York, requesting information of the origin and nature of the malignant fever, which then prevailed here, and a retrospective view of the fever in former years, came to hand while I was in the country, in a state of convalescence, from a fever taken, I presume, by constant attendance upon patients labouring under the fever, before their removal; and I have been compelled, since my return to town, by the pressure of business, and the time necessarily taken to procure correct information, to defer my answer till the present time, as most of the persons, from whom the information was to be derived, were scattered about the country; and I hope the Board of Health will not impute the delay to neglect, or want of respect.

I will now, without further preface, endeavour to give you as correct a statement of the fever, as the most careful in-

* With uncommon satisfaction we insert in the present number of the Register, the above highly interesting communication, from Dr. Bowen, an eminent physician of Rhode Island. Its appearance has been delayed until now, in order that we might gratify our readers with the perusal of the interesting document, on the same important subject, which follows the present article, and which, though for some time promised, has but lately been received. Ed.

vestigation will admit, and I hope, with the candour the importance of the subject demands.

And first, with respect to the origin of the fever. In order to investigate this point, it will be necessary to take into consideration the following circumstances, viz.

In the first place, the general state of the health of the town, and especially of that part where the fever prevailed.

2dly. The condition of the houses, wharves, docks, stores, &c. in the vicinity of the fever ; and,

3dly. The connection this district had with the shipping.

With respect to the first circumstance, the health of the town, &c.

At the time the fever made its appearance, and for a long time before, the town in general was remarkably healthy ; and this was the case more especially, with that part of the town, which was the seat of the disorder, immediately preceding its origin. For several years past, the town has been exempt from any remarkable epidemic catarrhal affection, angina, or other complaints, by many deemed the precursors of yellow fever.

2dly. Respecting the condition of the houses, wharves, docks, stores, &c. comprising the seat of the fever.

On the most careful scrutiny, it appeared that this district was remarkably clean and free from filth. There were no offensive gutters, nor accumulation of putrid animal or vegetable substances, to be found in or near it. The houses were detached from each other, generally ; and in the occupancy of families, who might vie with any equal number, in point of cleanliness, in any part of the town. The wharves and stores had nothing offensive about them, and the docks were as clean and free from any obvious putrid and noxious effluvia, or filth, as in the most cleanly part of the town ; and much more so than in some other parts, where the docks, at times, have been extremely offensive, from the noisome

stench issuing from them ; and which, at the same time, has been increased by the putrid effluvium arising from damaged beef and fish in the contiguous cellars and stores ; and yet, as far as my knowledge extends, no malignant or yellow fever has ever arisen therefrom, although these apparently formidable agents, with their combined powers, have existed in a number of cases, for several years past, that have fallen under my observation, and to such extent as to have excited very serious alarm for the consequences.

3dly. With respect to the connection of the sickly district with the shipping.

It is to be understood that the fever was confined, except in three or four cases, to be mentioned hereafter, to both sides of Water-street, extending about one hundred and thirteen yards parallel with the wharves. From the back part of the houses next the river, the distance may be about thirty-five or forty yards from the head of the wharves, and from the opposite side of the street, about eighty or ninety yards ; and it appears as a matter of fact, that all vessels from the West-Indies, and elsewhere, have been permitted, and have actually come up to the town, and unloaded their cargoes at the wharves, without cleansing or performing quarantine, until since the commencement of the fever.

And it furthermore appears, that three vessels from different parts of the West-Indies, have arrived and unloaded at the wharves within the infected district, a very little while before the fever broke out, viz. the brig Planter, from St. Croix, arrived on the 4th of July ; the brig Hiram, from Antigua, and the brig Juno, from Havanna, both arrived on the 12th of July, and the fever began in Captain Stephen Russel's family on the 19th following ; between which time and the 25th, nineteen persons more were attacked, seventeen in this district, and two living at a distance from it. At this time, the town council ordered all that part of the town

to be evacuated, and the vessels removed ; and the fever immediately ceased, except in two cases ; one of which, a son of Captain Trowbridge, occurred on the 7th, and Mr. Clifford, on the 12th of August ; the latter of whom declared to my partner, Dr. Eddy, and myself, that he was two or three times on board the brig Hiram, which vessel had been removed from her former situation, where the fever began, to the wharf back of the shop where he was employed, instead of being sent down to the quarantine ground. She has since gone to sea, and there are the strongest grounds to believe that Trowbridge had been in the infected street ; and if not, the shop where he worked was not more than thirty or forty yards from where the fever first began.

Of the two persons above mentioned, who were early attacked, and resided at a distance from the infected part, one was Captain John Warner, and the other Mr. Jos. Masury, jun. and it is perfectly well known, that both had been employed on these wharves, and had been on board the suspected vessels ; and there is no doubt but that they had the same fever the others had. Warner was quite yellow, and Masury died on the fifth day with the genuine black vomit, and other concomitant symptoms of yellow fever.

In addition to the above, I would beg leave to call the attention of the board of health to the following circumstances, viz. On the 25th of July, the order for the evacuation of the infected district, and removal of the shipping was issued, and immediately complied with, and the fever ceased, so that many families returned to their habitations about the middle of August, the very season when, in general, the yellow fever begins its ravages as an epidemic, and yet not the slightest case of fever or other sickness has appeared in this district, [August 28th,] and the town continues very healthy ; and what renders the case still more remarkable, is, that this district was in so clean a state, that no kind of alteration of

its former condition has been made in it, except that six loads of sand have been carted into one dock, and that merely because two privies were situated over it, but which were constantly washed by the ebbing and flowing of the tide, and, of course, no considerable accumulation could, or did take place. This dock was not offensive, and the house adjoining the wharf, and very near to the dock, was the only one, whose inhabitants were exempt from the fever.

It further appears by the declaration of Captain Benjamin Dexter, who had three of his family taken with the fever, that when some of these vessels pumped out their bilge water, it was so extremely offensive, that the workmen on his store were made sick, and in some of them to vomiting. And Mr. Goff declares, that the bilge-water pumped from one of these vessels was so particularly offensive, that he was obliged to shut up the doors and windows of his shop, notwithstanding his workmen [shoemakers] had been much accustomed to the smell of bilge-water.

I would further state to the board of health, that the persons attacked with the fever had been on board the suspected vessels, as well as that they lived in the vicinity of them.

With respect to the condition of the above-mentioned vessels, the following circumstances appear, viz. The brig Planter had two men taken sick with yellow fever on board, at St. Croix, early in the month of May, who were carried on shore, as soon as the disease was ascertained, and died; but I cannot learn that the clothing belonging to them was brought home, and the vessel underwent no cleansing, before or after her arrival.

The Hiram arrived on the 12th, from Antigua, and on her arrival, Mr. Church, one of her owners, says that he threw overboard twenty dollars worth of sailors' clothes, and the reason he assigned for it was, that the countenances of the

people did not look well, and he thought the air of the vessel was not good, and that part of the infection came from her.

The brig *Juno* also arrived 12th July, from Havana, and had one or two people sick on the passage home.

All these vessels, without performing quarantine or being cleansed, immediately on their arrival, unloaded at the several wharves of the sickly district, a little before the sickness began, as before stated.

Having thus related the circumstances respecting the origin of the sickness, as far as they have come to my knowledge, I am now to reply to that part of your request respecting its nature.

When the fever first made its appearance, considering the number attacked, and in so small a compass, in the vicinity of the wharves and vessels, and very near to where the yellow fever had twice before appeared in an epidemic form, it highly excited our fears ; and when, added to these circumstances, we found them labouring under the following symptoms, rigours, violent pains in the head and eyes, back and limbs, prostration of strength, sickness at stomach, with great distress, which was a constant and universal symptom with them all, with fever, &c. we were almost confirmed in the belief of yellow fever ; but as their eyes had not that suffusion so common to that fever, and the more decided and unequivocal symptoms kept off for four or five days, and considering the earliness of the season, we still hoped that we might be mistaken, and did not make a report to the council, officially, till the fifth day, when the symptoms assumed such an aspect, as left no doubt of its real nature ; for now one patient was attacked with the black or coffee-ground vomit ; another had a livid countenance, with petechiæ ; a third turned yellow ; a fourth had black vomit, and was yellow ; a fifth had black vomit and stools ; and a sixth black vomit and stools, and profuse hemorrhage from the mouth,

stomach, &c. and all of them great sickness at the stomach.

Six persons died about the fifth and sixth day from the attack. These symptoms, connected with the suddenness of the deaths, &c. will clearly point out to any person competent to judge of the case, that it was unequivocally the yellow or malignant fever.

I will now take a retrospective view of the foregoing statement, and draw the conclusion that appears to me naturally and fairly to result from it.

It then appears that the town of Providence has enjoyed a great degree of health for several years past, and been exempt from those epidemics supposed the precursors of yellow fever. That about the 20th of July, seventeen or eighteen persons were attacked with yellow fever, in a small district, till this time remarkably healthy. That this district was very clean and free from any obvious cause of sickness about the houses, stores, docks, or wharves; but that three different vessels, from three different ports of the West Indies, had arrived at, and unloaded on, the wharves of this district, without performing quarantine, or being cleansed; that one had lost two men with yellow fever, at St. Croix; another was suspected to be infected, by the owner; and that the third had had sickness on the homeward bound passage: that the inhabitants of this district and the vessels were removed on the 26th of July, and that the fever ceased; that about the middle of August, many of the inhabitants returned to their habitations in this district; that they have been there about a fortnight, and no sickness had recurred, notwithstanding no alteration has been made in the condition of this district, except six loads of sand put into one dock, merely because two privies were over it, but which were not, in any manner, remarkably filthy; that many of the sick had been on board of the suspected vessels; and, finally,

that they had been much affected by the extreme offensiveness of the bilge water of these vessels.

From the foregoing premises, I think we may fairly infer, that the fever was the yellow or malignant fever, and that it had its origin, or stood, somehow or other, connected with one or all three of the vessels above mentioned. This is, at least, my opinion, decidedly ; and not only of the fever of this year, but in each epidemic yellow fever in this town, I think I have the most unequivocal evidence of its importation ; and even in almost every sporadic case, I have been able to trace a connection with a source of foreign origin, either at the time, or, perhaps, by knowledge of it obtained a long time after.

Two such instances have come to my knowledge lately.

Now, notwithstanding my belief that the contagion is imported, I think it proper to observe, that I also believe, that it requires some peculiar, appropriate, and to me, inexplicable condition in our atmosphere, to render it capable of propagation, either as a medium, through which the contagion may be spread, or by combining with it, and thus rendering it active. It is like tinder fitted to receive a spark of fire, and as far as this appropriate state of air extends, when saturated or contaminated with the foreign or contagious principle, so far is it capable of communicating the disease to those who inhale it, and are predisposed to it : and I am led to this conclusion from the following circumstances : The disease, I believe, generally appears first as an epidemic, or in its propagating state, near to, or about wharves and docks, and extends its influence gradually and progressively ; so that if a patient ever so bad, and even dies with it, is carried into the country, or, in the beginning of the epidemic, into a distant part of the town or city, remote from the water, he does not convey the disorder, even to those in frequent con-

tact with him : at least, this has been the case with us, and I believe is generally admitted as fact in other places.

Now, if this fever possessed the common character of other contagious diseases, it would, like them, in all situations, and in all seasons, be more or less capable of propagating its kind under these different circumstances.

What this condition of the atmosphere is, that by assimilating with the contagion, or serving as a medium to it, which renders it so destructive to the human race, I cannot pretend to say, or even conjecture : but that it is not the object of our senses, I am fully convinced, from long and much observation. The inference, however, from this hypothesis is obvious, if we cannot comprehend the condition of our atmosphere, which renders the disease capable of propagation, then we should be the more careful to prevent the foreign principle from being brought into contact with the domestic one. This, however, is a task truly peculiar, considering the thousand different ways by running articles from vessels, by clothes sent from them, by persons visiting them secretly, &c. &c. by which it may be conveyed.

Before I quit this subject, I must beg leave to call the attention of the board of health to one circumstance attending yellow fever ; a circumstance of the utmost importance in investigating its nature, and so obvious, that one would think, that the meanest capacity would comprehend it, and which, at the same time, is overlooked by many eminent and ingenious men. It is this : that the first frost, or what is called black frost, destroys the real yellow fever radically, although it may, at this time, have extended its influence ever so far ; whereas the bilious and other fevers of our country, which are said to be only grades of the yellow fever, are often extended into, and through the winter and spring. Now, it appears to me absurd to suppose, that a cause which is capable to destroy the highest grade of a fever, should be unable to

produce the same effect upon the lower degrees of it : but as we every year see, that frost radically destroys the yellow fever at once, while our other fevers continue through the winter, in many cases, the inference is plain and irresistible, that there is a specific difference between them, although there may be some symptoms in common to them all.

With respect to a retrospective view of former years, I must beg leave to refer the board of health to some documents I am about to send on to Dr. Hosack upon this subject, and which I shall request him to give them the perusal of, if they should deem them of sufficient consequence.

You will please to tender my respects to the Board of Health.

I have the honour to be, with much respect,

Your obedient servant,

PARDON BOWEN.

September 10th, 1805.

SIR,

I have been under the necessity to withhold my communication until this time, as I was informed that one of the circumstances mentioned therein, was not correct, and the persons capable of giving correct information were absent. I have this moment seen one of them, and am now able to say, that instead of the brig Juno's having one or two persons sick on the homeward bound passage, she had only one man sick or unwell several days in the Havanna, but was able to do his duty home. This vessel was also at New-Providence during her voyage.

No person is or has been sick in the district, where our fever prevailed, and the inhabitants are all returned, with but a few exceptions.

Yours, with esteem, &c.

PARDON BOWEN.

III.

OBSERVATIONS *on the foreign origin and contagious Nature of the YELLOW FEVER, as it has prevailed in Providence, Rhode-Island, and other parts of the United States. In a letter to DAVID HOSACK, M. D. New-York, from Dr. PARDON BOWEN, Physician, Rhode-Island.*

SIR,

THE origin and nature of diseases, with their modes of operation on animal bodies, have, from the earliest history of medicine, employed the researches, and exercised the ingenuity of physicians and philosophers, in every quarter of the globe ; and notwithstanding a great mass of what are called facts, have been produced to establish their origin, and an abundance of curious and ingenious theories, framed to elucidate their nature and *modus operandi*, yet, they still remain obscured with great doubts and ambiguity ; and it is probable they will remain so in a great degree, notwithstanding all the aids furnished by the recent, numerous, and wonderful discoveries, in chemistry, anatomy, and the collateral branches of medicine.

It is true, that we often can trace a connected train or series of symptoms, and thus name a disease ; but to discover and elucidate the material or cause, or a complication and combination of causes, and their mode of operation on animal bodies, constituting a disease, is far, very far, beyond my comprehension ; and that it was also beyond that of all the theorists and system makers up to the present time, is proved, by each in succession building his own system on the abolition of that of his predecessors.

It is as difficult to conceive how the cause of a disease, be it contagious or infectious, or of whatever class you may please to designate it, operates on the living animal system, so as to produce the peculiar morbid action or excitement constituting its particular nature, as it is to comprehend the manner in which the mind, by the power of volition, operates on the muscular fibres of particular parts, to excite them into action, and produce certain determinate movements, and this without the knowledge of the animal, of even the muscles put in requisition.

This fact is continually passing in review before us; and yet after a lapse of many thousand years, and the united researches of mankind, what do we know further respecting the mysterious manner in which the mind acts on matter? What new thing, or new fact, has thrown a ray of light upon it, to irradiate the benighted understanding—to withdraw the impervious veil, and disclose this arcanum of nature? None! and, probably, mankind ever will remain in profound ignorance of it, while they retain their mortal form and nature: for only spirit, after death, can comprehend how spirit, or the vital principle, can operate on substantial forms.

Although I have said, that I conceive it impossible to comprehend the nature and *modus operandi* of diseases beyond the nosological classification of them, and that, in general, their source or origin, was involved in much obscurity; yet I shall endeavour, by producing a series of facts, to prove the origin of one that has excited more interest, and produced more alarm, for some years past, than any that is recorded in the annals of medical science in America: I mean the yellow fever. And I wish to have it distinctly understood, that when I speak of yellow fever in the United States, it is that disorder described by Dr. Chisholm and other writers, which has prevailed in the West-Indies since the year 1793; and which I believe to be a different disease,

and more malignant than that which was called yellow fever before that period ; at least it appears so to me, and I have had an opportunity to view the disorder in both of the periods above alluded to ; having been surgeon of a ship in Hispaniola in the year 1782, when the disease, then called yellow fever, raged with as much violence as is usual in that climate, and seized many of the crew on ship-board, labouring under every disadvantage of foul air, and crowded so close in their hammocks, between decks, that it was difficult to get between them ; when, under these unfavourable circumstances, only seven out of more than one hundred men died.

It is now several years since the yellow fever, that terrible scourge of our maritime towns and cities, has visited the United States, at least the northern section of them ; and we can now contemplate it more calmly, and weigh the evidences respecting its origin with much more accuracy, and make up a judgment with more precision, than when our minds were agitated with the apprehension of its annual visits.

It is generally well known, how much the question respecting the origin of this fever has engaged the attention, and employed the pens of writers in medicine, and how much has been said and written on the subject by other people, without settling the point in dispute ; but as every one ought, without being biased by preconceived opinions, to make up his judgment upon any point by the preponderance of the facts and evidences brought in support of it ; so, I suppose, different persons have formed different opinions about its origin, according as the weight of evidence has inclined to the one side or the other.

There are many, I know, who are led by the opinions of others, without taking the pains of investigating facts for themselves ; and others influenced by the pride of opinion,

who, having once imbibed an erroneous idea, will never relinquish it.

For myself, I had early entertained the opinion, that the yellow fever was an imported disease; and it may appear singular to you, when I declare, that I was led to this belief by reading Dr. Rush's treatise upon the yellow fever of Philadelphia in the year 1793, to prove its domestic origin. But the history of that fever, as given by him, appears to me to warrant a belief of its foreign origin. I, however, held my mind open to conviction, to be either confirmed or changed in my opinion, as further and more conclusive evidence should appear.

And I can most conscientiously declare, that the great mass of evidence produced since that period, has fully confirmed me in the belief that the yellow fever, whenever it has appeared in this town in an epidemic form, has always been imported, as well as in every sporadic case.

To support this opinion, I must go back to the first appearance of the fever in this town, and adduce a series of facts upon which it is founded; and in order more fully to support it, I shall submit a chain of reasoning growing out of these facts, and connected with the circumstances attending them.

The first case that I saw in this country that I consider to have been the genuine yellow fever, was that of my nephew, the son of the late John I. Clark, who came through Philadelphia during the early period of the fever there, in the year 1793; from whence he arrived in this town after a short passage, was taken immediately ill, and died in a few days with what appeared to us afterwards the real yellow fever.

No other case, either in the family, or in the town, occurred, to my knowledge, in that season.

In the year 1794, several cases occurred, attended with circumstances so peculiar and strongly marked, that they

made a deep impression on my mind, and proved beyond a doubt, that they, at least, were imported, and of foreign origin.

In August of this year, (1794,) Captain Joseph Gould arrived in a schooner from North-Carolina, being himself and two more, out of three persons who comprised his crew on board, sick; they were so ill when they arrived in the river, that they could not get the vessel to the wharf; and I visited them on board, and found these three persons labouring under all the marked symptoms of yellow fever; such as great distress and sickness at stomach, yellow skin, and in one of them the black vomit; this man died and was buried in Rehoboth; but as I had pronounced it the yellow fever, the alarm spread, and only two or three persons followed the hearse at a distance.

It now became a question with me to determine how these people came by the fever: and to my repeated inquiries Capt. Gould replied, that they came from Wilmington, in North-Carolina, and that it was as healthy as usual there; and that no yellow fever, or other epidemic, prevailed in the town or neighbourhood: and I then concluded, that these cases either originated on board the vessel, or in North-Carolina, and did not stand connected with the West-India yellow fever.

It so happened, that in a few days after the arrival of the before-mentioned schooner, Capt. John Bullock arrived in another vessel, from another port in North-Carolina, very sick. I was called to him, and found him labouring under the most marked symptoms of yellow fever. He recovered; and to my inquiries answered as Capt. Gould had done, viz. that no sickness had prevailed before or at his departure, either near the river, or at the port he sailed from; and that no other person on board his vessel had been sick, or was taken with the fever afterwards. This more fully confirmed me in the opinion that this case of yellow fever also originated on

board his vessel, unconnected with the West-Indies; and, probably, I should ever have remained in this belief, if Capt. Gould, who came home in the first vessel, had not survived. Some time after his recovery, recollecting the earnestness of my inquiries respecting the circumstances of his vessel and voyage, he came to inform me of certain facts which have a material bearing on the point in dispute, and tended, as much as any thing I had become acquainted with, to establish my belief in the foreign origin of the yellow fever, and particularly its connexion with the West-Indies.

He gave me the following circumstantial information, viz. That Capt. Slocum sailed in a vessel belonging to himself and his father-in-law, Capt. John Bullock, from an infected port in the West-Indies: that he lost three of his hands with yellow fever on the homeward voyage: that he arrived at this port with a cargo of West-India produce; and his crew being most of them dead, and he himself quite indisposed, Capt. Gould went on board with another set of hands, and proceeded directly for Wilmington, in North-Carolina, where he arrived after a short passage, and discharged his cargo, and set out immediately on his return voyage; during which, he and two of his men were seized with the fever, as before related. He further informed me, that the vessel had undergone no kind of cleansing or purification, either at Providence, during the voyage, or at Wilmington.

This information unfolded the source, in the most satisfactory manner, from whence he and his crew derived their fever; but it threw no light upon the case of his father-in-law, Capt. Bullock, whose vessel had not been in the West-Indies, like the other; and the port in North-Carolina from whence she sailed was healthy, and nobody on board of her had been sick except himself; and yet his was as decided a case of yellow fever as those in the first vessel.

Capt. Gould then proceeded to disclose another fact, which

resolved every doubt, and corroborated, in the most conclusive manner, the origin of the fever in both vessels.

He stated, that Bullock and himself were joint owners of both vessels; that they sailed about the same time from different ports in North-Carolina; that they met at sea, and that Capt. Bullock went on board Capt. Gould's vessel, and staid one night; and it appeared that Capt. Bullock was attacked with yellow fever in about six days afterwards. The case, then, stands thus: Capt. Slocum arrived from a port in the West-Indies where the yellow fever prevailed; three of his hands died with it on the homeward voyage, and he was himself sick. Capt. Gould, with a fresh set of hands, went on board, without any kind of cleansing of said vessel, proceeded to Wilmington, and on his return was himself, and two of his people, seized with yellow fever. His father-in-law, Capt. Bullock, went on board his infected vessel at sea, staid on board one night, and came down with the same fever in about six days after. Thus affording the strongest possible evidence the case will admit of, of the foreign origin of this fever. How clear and connected are the series of facts, without any interruption in its links, all tending to prove this point! approaching as near to the certainty of mathematical demonstration as this kind of evidence will admit of. Nobody took the disease from these patients. And I would observe, that all the above stated facts can now be substantiated by living witnesses.

In the year 1795, I attended a person from New-York, who died with yellow fever, near the market, in a large house crowded with tenants, and under circumstances apparently favourable to its propagation, and yet nobody took it from him. He had a yellow skin, petechiæ, hemorrhage, and black vomit. The yellow fever was in New-York when he left it.

Passing over these scattered and solitary cases, I come now to the year 1797, when our first epidemic yellow fever

appeared amongst us, carrying desolation through the district where it raged, and dismay and terror through the town and country.

Here, too, the evidences of its foreign origin were so clear and conclusive, that it would appear impossible that an unprejudiced mind could withhold its assent to it. I will relate its history :

About the 4th of August, 1797, the schooner *Betsy*, belonging to Messrs. Wardwell and Coxwell, of Bristol, and commanded by Capt. Burr, arrived at this port from the West-Indies, and came to at Capt. Joseph Tillinghast's wharf, in the south part of the town, where she lay for some time. In about six days, eight persons, in different and remote parts of the town, were all attacked with a fever of a similar character, which destroyed seven of them in five or six days, and excited a universal alarm ; and the more so, considering the patients resided so far apart, rendering it thus more difficult to assign any local cause for it, and thus also preventing the inhabitants from taking the usual precautionary steps to guard against it.

At the same time these seven persons died in town, Mr. Cole, a custom-house officer belonging to Warren, twelve miles from this town, and Mr. Wimor of Rehoboth, about four miles distant, were both seized and died with the same fever in a few days after the attack, as appeared by correct information obtained from persons who witnessed their sickness. I was requested to visit both of them, but was unable to leave town on account of the sickness and alarm here.

The eight persons above alluded to in this town, were William Tillinghast and Mrs. Arnold, the wife of our town treasurer, who lived near Joseph Tillinghast's wharf, where the above-mentioned schooner *Betsey* lay, four women in John Brown's long house, in the south part of the town, some distance below this vessel, and Lemuel Pitcher, and —

Fuller, in George street, a very remote and elevated situation.

You will at once see, sir, that these persons lived at a considerable distance from each other; some near the river, some, as Pitcher and Fuller, in one of the most elevated parts of the town, Wimor in the country, and Cole in Warren. And the question will naturally arise in your mind, how it was possible, that all these people could be attacked with the same fever from one and the same source?

This, I hope, I shall prove, to your satisfaction, they did. I confess, however, on a first view, and a superficial observation of the case, it appears to be impossible. But when we come to examine all the circumstances connected with these cases, we can find in all of them the most direct connection and communication, either with the schooner at Tillinghast's wharf, or with persons or clothes of sick persons, who came home in her, or, as in the case of Mrs. Arnold, residing so near her, as to be within the sphere of her contagious influence.

In pursuing this investigation, I will first call your attention to the cases of the four women in Mr. Brown's house, a considerable distance below the vessel, and who had not been near her, and must, if they took the fever from her, have taken it indirectly, and this I shall prove to you, was the fact. Obadiah Brown, one of her crew, came home sick at the time of his landing, and went directly to this house, where his sister then lived, and carried his bedding with him. Bear in mind, sir, that this house contained nine families, comprising thirty-five souls; and it so happened, that on the next day, or the day following, while his sister was pounding the blankets on which he had lain during his sickness, in a barrel with hot water, these four, these very identical four women, came into the room from four other families in the house, and stood near, and partly

over the barrel for about half an hour during the operation, and on the fourth day thereafter, were all taken with the fever, and three of them died in four days from this period. These facts I had from the survivor, who was a member of Dr. Gano's church, and was informed, at the time, of the importance that the information she would give should be correct. And it is a powerful corroborating proof of its foreign origin, that no other persons of the numerous tenants of this house took the disease, which almost certainly would have happened, considering its crowded situation, if it had originated in, or near it.

It is true, this inference has been objected to, because the woman pounding the clothes escaped the complaint. But this is by no means a conclusive argument; for it is well known, that some are not predisposed to take the fever. And, besides, I conceive it very possible, that the powerful state of excitement she was under by so hard labour, and the perspiration she was in, might have prevented its action upon her system, or have carried it off if inhaled.

Look now at Fuller and Pitcher's cases, in George street: These, also, will tend to prove, most powerfully, that they received their fever from this same vessel, living at a great distance from the general scene of the ensuing sickness, in an elevated and airy situation: no one can suppose, or will venture to say, that causes, usually assigned to produce the disease, existed near their habitations. When a cause is sometimes known to produce a given effect, even if this effect does not seem to follow regularly the apparent cause, it is much more philosophical to explain the effect from this cause, than from an imaginary one, or from no cause at all, as was the case with these two men; but here we have a cause fully sufficient to explain the effect in the most satisfactory manner, and remove every difficulty resting upon it.

These two men, Pitcher and Fuller, worked in their shops on the head of Gifford's wharf, within seventy-four feet of the infected vessel at Tillinghast's wharf; and it is also known, that Fuller not only did work for, but was on board of her.

Wimor and Cole's cases, were, if possible, more absolute and conclusive proofs of the foreign origin of this fever, than either of the foregoing; and also, that they both derived their fever from the same source; for it can be proved, that both had been on board the infected schooner while on her passage up the river. And it would be a most extraordinary circumstance, that only one person should die in Rehoboth, and one in Warren, this season, with yellow fever, and that each of these had been on board this vessel; unless you admit the supposition that they took the fever from her.

Tillinghast not only lived near the vessel, but had been on board of her; and Mrs. Arnold resided very near, and directly opposite the wharf where she lay.

The fever by this time excited the utmost alarm and terror, both on account of its mortality, and the numbers seized with it; and it was now, after the foregoing eight cases, confined entirely to a small circle in Tillinghast, Gifford, and Arnold's houses, the three most contiguous to this vessel; and from it gradually extended, as from a central point, till its progress was finally stopped by frost; forty-two persons falling victims to its fury. Of these, sixteen died in three houses most contiguous to the vessel. And from Mr. Arnold's every soul was swept off.

I presume that it will not be denied that this was the genuine yellow fever. If, however, any doubts remain about it, I will describe the general course of its symptoms, which I think must remove them. I will take Mr. William Tillinghast's case, a journal of which I have preserved. The most prominent of his symptoms were, a yellowish flush about his

breast and armpits ; his eyes in a state of inflammation, and blood-shotten, comprehending not only the conjunctive tunic investing the globe of the eye, but also that part reflected under the eye-lids, exhibiting the appearance of a bright red colour laid over a coat of orange ; his mouth and fauces partaking of the same inflammatory symptoms with his eyes ; frequent retching, petechiæ, black vomit, and death, to close the mournful scene.

There were some circumstances connected with the question of the origin of this fever, of so singular a nature, and having so strong a bearing upon it, that I cannot forbear relating them, seeing they will assist us the better in making up a judgment about it.

The fever, in its progress, extended as far north as Capt. Benjamin Dexter's, and south, as far as Mr. Brown's long house, before mentioned, the distance of about one hundred and eighty paces. And it appears that a company followed seignig menhaden through the summer, up to the time of the fever, averaging about ten barrels three times a week, which were brought to Ashton's wharf, four houses north of Dexter's, opened, and the guts and gills thrown into the dock, some of which would be necessarily exposed, at low water, to the influence of the sun in the day time. Again ; south of this district, and four or five houses beyond where the fever extended, were situated three distilleries : the middle one occupied as a gin distillery, with which was connected a long range of hog sties, containing two hundred and fifty hogs, where, consequently, there was a combination of animal and vegetable matters, constantly under the putrefactive process in its highest state of activity, aided by heat and the crowded situation of the animals ; and from whence issued such fœtid and offensive exhalations, that all the neighbourhood were incommoded, and the whole atmosphere impregnated with them. These were sources as

prolific of infection and yellow fever as the most zealous advocates of domestic origin could conjure up: but how stood the facts respecting them? Why, the yellow fever, already existing in a central point between both, gradually extended itself toward them, till it arrived, at length, to within a few houses of them, at each extreme, and there stopt. No person employed in the fishery on the north boundary took it; and those engaged at the other extreme in the distilleries pursued their employment through the whole course of it, without the slightest attack.

These, sir, are extraordinary circumstances, and necessarily arrest the attention of every person disposed to scrutinize facts; and I will hazard the temerity to propound this query: Did the putrid exhalations, the mephitic gasses, and the septic acid, evolved, and continually issuing from these magazines of corruption, arrest, in any degree, the progress of the disease? Or was it some other powerful agent that interposed a barrier to the progress of this terrible malady? I will not presume to answer in the affirmative to the first of these queries. I cannot believe a thing so totally repugnant to the universally received opinion of mankind; and yet I think more facts and further observations are required, before we make up a final decision about it.

Of the yellow fever of the year 1800, I shall say but little, not having it in my power to relate many circumstances from personal knowledge, as I was absent at its commencement, and during a great part of its continuance; but I believe the foreign origin of this particular epidemic has been generally admitted, even by persons who believe in the domestic origin of almost all other cases of it. Nay, they even point out the identical chest of infected clothes brought into Carr's house, which were there opened and

washed, and from whence the fever immediately spread in every direction.

Passing over this, we come now to the fever of 1805, the third epidemic yellow fever of this town, concerning which, I shall produce facts and evidences of its origin, that I should hope would carry conviction to every mind not rendered impenetrable by preconceived opinions and prejudices. I beg first to premise, that before and at the time the fever made its appearance, the town was, in general, remarkably healthy; especially that part of it which was the seat of the disease immediately preceding its first appearance. and that the town had enjoyed a great share of health for several years back; during which no epidemic, catarrh, angina, or other complaint, the supposed precursors of yellow fever, had occurred.

Having stated these facts, I proceed to the history of this epidemic.

On the 4th of July, 1805, the brig Planter arrived from St. Croix; and on the 12th, following, the brig Hiram arrived from Antigua, and the brig Juno from the Havanna, and came directly up to Capt. Godfrey and Dexter's wharves, within a few rods of each other, where they unloaded without any cleansing or precautions of any kind; and I beg leave to call your attention, in a particular manner, to the above dates when these vessels arrived; and to bear in mind, also, that they came from infected parts; and that one of them, the Hiram, had had sickness on board: That they arrived at Godfrey and Dexter's wharves, while the town was in perfect security, and in the enjoyment of full health, on the 4th and 12th of July, and there unloaded; and then mark, that on the 19th following, the fever first appeared in Captain Dexter's house; between which time and the 25th, in the short period of seven days, seventeen persons were seized with it, in a small district immediately surrounding

these vessels ; and, also, two others, whose cases will hereafter be mentioned.

At this time, the 25th July, (six persons being now dead with the fever) the town council ordered the above-mentioned vessels, and every inhabitant within certain limits around them, removed, both sick and well ; and the fever immediately ceased, except in two instances ; those of Clifford and Trowbridge ; and Clifford declared to me, that he had been on board the *Hiram* after her removal. And there is the strongest reason to believe, that Trowbridge had been in the infected street ; and if not, it is known, that he worked within fifty or sixty yards of where the fever began.

Of the two persons attacked, who resided at a distance from the district, one was Captain John Warner, and the other, James Masury, jun. ; both of whom had been on board the suspected vessels. This fact is not denied ; and there is no doubt they had the same fever with the others. Warner, in addition to the usual symptoms, was yellow ; and Masury died on the fifth day with black vomit, and the other concomitant symptoms of the disease ; which were in the first two or three days, rigours, violent pains in the head, eyes, back and limbs, prostration of the strength, suffused state of the eyes, sickness and distress at stomach ; this was a constant symptom ; and after three or four days, petechiæ, hemorrhages, sublivid or yellow skin, and black vomit. A bare recital of these symptoms will convince you, that this disease was the real yellow fever.

I before said, that the town council had ordered the suspected vessels, and all the inhabitants in the infected district removed, and that the fever immediately ceased ; and so complete was its eradication, that except the cases of Trowbridge and Clifford, which have been accounted for, and I hope satisfactorily, no new case occurred, although many of the inhabitants returned to their houses by the mid-

dle of August, and the remainder by the twentieth; the very period when the yellow fever generally begins its career in the United States.

When we consider also, that no alteration was made in this district, except by casting six loads of sand under two privies, situated over the water, and constantly washed by the tides, and yet find no return of the fever; whereas in every other instance, when it has assumed its epidemic form, it has continued its destructive ravages till subdued by frost, we are irresistibly led to seek some foreign and extraneous agent, armed with powers capable of producing so desolating a pestilence.

If, too, we take into consideration the local situation and circumstances of this part of the town, and its inhabitants, their houses detached from each other, clean and well ventilated, their possessors easy in their circumstances, annoyed by no foul sewers or gutters near them or the wharves, and the docks as clean and free from filth as any in the town, and much more so than in many other parts, where the fever did not appear; we are compelled to seek the cause in the vessels which had just before arrived at this very point, and unloaded without cleansing or ventilation. And when, added to this, we unite the facts of their coming from infected ports in the West-Indies, and that one of them had had sickness on board, we cannot avoid, from the clearest inductions of reason, concluding, that one, or all of them, were the cause or causes from whence the fever was derived; for unless we admit this inference, in vain shall we seek any other visible or assignable cause for it.

Before quitting the history of this particular epidemic, I will relate a circumstance of some weight, as tending to prove the remarkable exemption of the whole district from any visible cause of the disease.

After the return of the fugitives to their homes, about the middle of August, expecting, that if the fever were of local origin, it might reappear, they sat themselves to work to discover the cause, and in their investigation could find nothing in the district that could support such an opinion, except the two privies before named. These were situated on both sides of Christopher Arnold's dock; from the dock an avenue leads to the street about twenty feet wide, and eighty in length; at the end of this avenue are situated Captain Christopher Arnold and Captain Christopher Sheldon's houses, and almost directly opposite, Captain Pardon Sheldon's house; and notwithstanding the contiguity of those buildings, to the only spot supposed capable of causing the fever, not a soul in them was attacked with it. This fact proves that these privies were not the source of the disease. I had the curiosity to visit them: they were situated at the sides of the wharves over the water, and daily washed by the tides; and the most fastidious minds might have ventured to pay their devotion at those temples of Cloacina without scruple.

Having thus stated the principal facts connected with the appearance of the yellow fever in this town, that have come under my immediate observation, or been derived from unquestionable sources, and which can now be substantiated by living witnesses, I shall make some general observations, and draw such conclusions as are warranted by the facts and fair reasoning from them. And

1st. We will consider the general state of health of the town, prior to the appearance of the yellow fever that appeared in an epidemic form.

2dly. Something further of the situation of the town, respecting its connections with docks, wharves, shipping, &c. and,

3dly. With other parts of the town, combining all the supposed causes of yellow fever, but where it has never appeared, at least in an epidemic form.

With respect to the first consideration, the general state of health of the town, at, and preceding the several epidemic yellow fevers, I would observe, that in the year 1792, we had a singular epidemic for our climate; many persons became yellow, with a high saffron colour, and sometimes almost black urine, costive bowels, &c. but with neither fever or thirst. This was undoubtedly the jaundice; but what constituted its peculiarity was, that it was accompanied in many cases with petechiæ, vibices and hemorrhages, and yet it was not mortal. In only one case did it prove fatal, that I know of.

In 1794, an epidemic fever prevailed on the west side of the river, beginning, and being principally confined to the hill near Hayle's tavern, and from thence as far eastward as the high ground extended.

In 1795, another, and more extensive epidemic fever began on the west side of the river, appearing first near where the theatre now stands. These were undoubtedly the fevers of our country, having all the symptoms of our typhus fever, diversified by the peculiarity of constitution in many cases; but essentially different from the yellow fever; and the mortality was comparatively small, considering the numbers attacked.

During both these years the town was remarkably healthy on the east side of the river, as it was also in 1796, and till the yellow fever began in August, 1797; and no part of the town was more exempt from sickness during these years, than that which was the immediate seat of the yellow fever.

With respect to the yellow fever of 1800, I do not know, that any remarkable disease preceded it. I have no notes respecting the subject; but as it is generally admitted, that

this fever was not of local origin, it is less material to determine this point.

With respect to the yellow fever of 1805, I have before remarked, that preceding it for several years, and till its commencement, the town had enjoyed a remarkable degree of health.

With respect to the second consideration, as relating to the situation and connection of the districts where the fevers have prevailed, with shipping, docks, wharves, &c. I would observe :

The seat of the first fever, that of 1797, was from Mr. Godfrey's to Mr. Brown's house, opposite Captain N. Power's, on both sides of the street.

That of 1800, from Mr. William Thayer's to Thomas Sabin's ; and the last epidemic yellow fever of 1805, was very circumscribed, occupying only a small circle around Godfrey and Dexter's houses ; the three epidemics comprising a distance short of five hundred paces. These different seats of the fever, you will perceive, constitute but a small part of the town, bounding on the river: they pretty much comprise one district only, and stand more immediately connected with the shipping, than any other part of the place, and more exposed to any malignant or contagious diseases they may be infected with on their arrival.

Any one who will visit this part of the town where these fevers prevailed, or who had visited it during those periods, will seek in vain for those causes of its domestic origin which have been said to generate it. Let us examine, for instance, the seat of the yellow fever of the year 1797. View the ground gradually rising from the river up to the back street ; examine the houses from Godfrey's to John Brown's house ; see them clean, well ventilated, and detached from each other ; occupied by people in easy circumstances, and good livers ; go down to the stores and wharves, you find them

also clean and free from offensive smells ; look into the docks, they penetrate but a little way in, and are thus the more easily washed by the tides ; you see nothing in them that appears to be the cause of the fever ; with less dock effluvia than you find in many other parts of the town, where the fever has never appeared. In a more particular manner, look at, and into Mr. James Arnold's house directly opposite the infected vessel, enjoying a large open space in front, of 120 feet breadth, and reaping all the benefits of the sea breezes ; the houses on both sides, detached on the south sixty feet, and on the north eighty feet distance, and connected backward with a beautiful small meadow, extending two hundred feet eastward, in full vegetation : consider all these circumstances, and then determine, whether this is the dwelling you would have selected for the fever to exert its most mortal and concentrated power upon ; and yet here, in a most particular manner, it exhibited its utmost malignancy, leaving not a soul behind to mourn its ravages.

If it is objected to the above description of this part of the town, that Mr. John Brown's long house was an exception to it, I grant it, for here, and here alone, in the whole range of the district, was there an accumulation and combination of the causes supposed capable of originating the disease : but I have, I hope, satisfactorily accounted for the appearance of it here before, and will only observe, that after the death of the three women who died in this house in the very beginning of the fever, no other person was attacked in it.

The foregoing observations respecting the seat of the fever of 1797, as connected with the shipping, docks and wharves, the cleanly condition of the houses, the comfortable circumstances of their tenants, and the exemption of the district generally, from filth, stench, or any apparent cause of disease, will apply with equal force, to the seats of the fevers of 1800 and 1805 ; in fact, they comprise but one district of small

extent, of less than five hundred paces; the first of the fevers of each year, in part, running into that of the others, so that it is needless to detain you longer on this subject. I will only appeal to the knowledge and candour of those gentlemen present, who were here during the prevalence of the fevers; and ask them, whether at those periods, or since, while visiting in this district, they discovered, by their organs of sight or smell, or through any other channel, any of those causes assigned by the advocates of domestic origin, which appeared to them capable of generating yellow fever? And I will go further, and ask them, if they have not, in several other places in the town, seen these assigned causes existing in a high degree?

I come now to the third and last consideration, viz. that respecting other parts of the town, combining all the supposed materials and causes of the fever, and yet, where it has never appeared, at least, as an epidemic.

And, 1st. I will mention the three distilleries in the south part of the town, with their two hundred and fifty hogs, wallowing in their accumulated filth; contiguous to which, is the south dock, with its waters loaded with filth and putrifying materials, brought down by the rivulet, and emptying into it the aggregated result from the whole range of the hill east of the town.

So prolific was this source thought to be of yellow fever, that one of our most respectable citizens, in an essay on the subject, considered it a principal one. And when objections were made to this opinion, on the ground that the fevers did not appear in this neighbourhood, being at a considerable distance north of it, he broached this curious hypothesis to support his doctrine, viz. that contiguous to this sink of impurity, on its south side, rises Fox Point Hill, eighty or one hundred feet high; that the noxious exhalations ascending,

were kept condensed by this hill, till they gained the summit, when they were wafted, by the southern gales, over all the contiguous and neighbouring houses and hog pens, up to Tillinghast and Gifford's wharves, and over the infected schooner, and then descended, fraught with pestilence and desolation, upon this devoted spot.

This opinion needs no refutation.

Let us now turn our attention to other parts of the town, and see, if the above described situation could not originate the fever, whether we cannot conceive of one, so combining, in a super-eminent degree, all the assignable causes of domestic origin, that it shall absolutely compel our assent.

I will attempt this description. We will first suppose the front, or head of a dock sixty feet wide, made by a street in a populous part of the town—let this dock extend, gradually widening southeasterly, a quarter of a mile, to the channel of the river; bounded on the one hand by marshes and stagnant pond holes, and on the other, hemmed in by wharves: next let us imagine the water of this dock to have no current, in consequence of its confined situation, and to be very shallow, merely rising and falling with the tides.—Now let us again suppose the bed of this extensive dock to be a soft and miry mud, continually, during the heat of the day, discharging myriads of visible air bubbles, which, arising through the water, discharge their gas into the atmosphere; or when the water is out, into it, without this medium. Here we have got all the requisite causes and conditions for the fever that can be obtained from the river.

If, now, we can superadd equivalent causes from the land, we shall have obtained the whole groundwork and complicated machinery of domestic origin.

We will again suppose, that by every rain is washed down all the accumulated vegetable and animal substances, of more than half a mile in length, of one of the principal

streets in town, and deposited in this dock, there to be commingled with whatever had been previously collected, and exposed to the fervid rays of an almost vertical sun. We can now easily imagine, that from this magazine of congregated and heterogeneous materials, of vegetable, animal, and marine productions, shall arise exhalations, so surcharged with noisome and mephitic principles of this Pandora's box, as to fill the circumambient air, and offend, and sometimes almost to stifle the neighbouring inhabitants and passing stranger. I will only tax your indulgence with one more supposition, and shall then have the picture completed. We will conjoin to it an epidemic yellow fever constitution of the atmosphere, such as was said to prevail in the years 1797, 1800, and 1805, when the yellow fever prevailed in this town.

Having thus put in requisition, and arrayed under the most favourable circumstances, every possible cause, said by the supporters of domestic origin, to produce yellow fever; shall we not confidently expect to see all the neighbouring inhabitants swept off by the generated pestilence? and this devoted place left desolate and deserted? And how incredulous would the supporters of domestic origin be, were I to inform them, that the foregoing picture was not a fiction, but a real transcript from nature—drawn, to be sure, with feeble colours—and that the inhabitants remained harmless in the focus of this mephitic atmosphere, although their dwellings were immediately contiguous to the northwestern parts of it, and in the range of the southerly breezes, and under circumstances, where the exhalations must have acquired their maximum of power; that no yellow fever ever approached this street; every body reposing in security, and rising to pursue their usual occupations, enjoying as much health as fell to the share of the inhabitants in any other part of the town, and only wondering that people should be frightened at ideal danger.

I presume, sir, after what has been said above, I need not name *muddy dock*, to enable you to recognize the resemblance of the foregoing picture ; for there you will find every part of the description realized, except that, since the prevalence of the fever, the head of the dock has been filled up some distance off toward the channel ; and that I forgot to mention that some of the adjoining houses were built upon made land, filled in upon marsh ; another alleged cause of the fever.

If it were necessary to point out other situations, thought to be peculiarly adapted to generate an indigenous yellow fever, I would direct your attention to that part of the town extending from the bridge westward, comprising Westminster, and part of Weyborset streets, which are built almost entirely on made land, filled in upon marshy and swampy ground, and so low, that in many of them their cellars contained stagnant water, and in some it remained, through the season, a foot deep, covered with green ooze, and which rendered them totally unfit for use. On each side are a range of docks, daily bare, at ebb tide, with a bottom of deep and soft mud, partially washed by the tides, but never scoured by its current. One of these streets sends down through its whole length of half a mile, during every rain, whatever filth it may contain, which is deposited in the river, near the bridge ; and to this we may add, during some years, putrid beef and fish, deposited in cellars. This has often been a public nuisance ; and I well remember that Dr. Williams, who had the idea of domestic origin fully engrafted in his head, made a complaint to the town council about it, and was about to remove because no steps were taken to rid the town of it ; and yet no yellow fever has ever visited this part of the town, although one of the most crowded and populous districts in it. It is even one of

the most healthy parts of it. It has, in common with the low main street, on the east side of the river, extending a mile upon its margin, been generally more exempt from disease, especially fevers, than the elevated parts of the town. And this fact will appear the more extraordinary, if we take a slight general view of the town : You find it situated partly upon, and partly between, two elevated hills ; intersected by the river ; containing many wharves and docks, or receptacles, subjected to the washing down into them, of whatever is accumulated in the higher grounds, necessarily containing much filth ; and yet it is an incontrovertible fact, that the high and elevated parts of the town are much more subject to fever than the low parts ; and so much so, that it has completely confounded the established opinions of physicians and philosophers, and prostrated their theories in the dust. If any gentleman can explain the cause of this difference, I will thank him ; I have been endeavouring for many years to solve the difficulty ; but, like a man in miry clay, the greater efforts I make, the deeper I sink in perplexity ; and it only tends to prove to my satisfaction, that very often, when we talk about the origin of diseases, we know nothing about the matter.

These observations apply more particularly to the diseases of our country ; but with respect to that one called yellow fever, it appears to me, that we have abundance of evidence to believe in its foreign origin ; and that it is a disease *sui generis*, generated originally in tropical climates, and oftentimes brought into, and propagated under favourable circumstances in the United States. And I believe it requires a peculiar constitution of atmosphere, as a pabulum to support the contagion, and render it capable of reproduction : this peculiar condition is, I believe, found in sea vessels, and about salt rivers, docks, &c. but not espe-

cially dependent upon the process of putrefaction, or any known or visible property of it ; but whatever it may be, it is as tinder to the spark of fire ; and whenever the imported contagious principle comes in contact with it, the fire is kindled, the fever is lighted up, and its extent and duration will be commensurate with this peculiar constitution of the atmosphere to propagate it.

Laying aside every other consideration, there is one strong fact that proves the yellow fever totally different in its nature from our country fevers ; and which, duly considered, will put the matter in dispute forever at rest. It is, that frost destroys the yellow fever root and branch, on its first approach ; whereas, the fevers of our country, even the most violent of them, as the typhus, the angina maligna, and spotted fevers, not only continue into, and through the winter, but oftentimes are rendered much more malignant and fatal by this circumstance.

IV.

A CASE OF CAROTID ANEURISM successfully treated : Communicated to Dr. DAVID HOSACK, by WRIGHT POST, Esq. Professor of Anatomy and Surgery, in the University of the State of New-York.

PETER THOMAS, a black man, born in the West-Indies, aged thirty-five years, was admitted into the New-York hospital, January 5, 1813, with an aneurism of the carotid artery, situated immediately under, and in contact with, the angle of the jaw on the right side.

The first symptom of this disease, which was a pulsatory sensation, was felt in March, 1812 ; but no swelling was at that time visible. Soon after, on examination, a small tu-

October 25th. His pulse continues feeble and frequent, though he is considerably better.

October 29th. He is rapidly recovering from his debility, and is again enabled to take his usual exercise about the house. Portions of coagulated blood are discharged, with an increased quantity of the dark coloured matter before mentioned. His pulse still small, but not so frequent.

November 1st. He complains of much pain in the tumour, particularly upon pressure. Let the yest poultice be applied.

November 3d. The size of the tumour very much diminished since the last report, and not so painful. The discharge extremely copious.

November 7th. The tumour has decreased one third since the application of the poultice on the first of the month.

November 20th. The whole contents of the sac appear to be discharged, and healthy granulations are seen rising from the bottom. Let the poultice be omitted, and dress with dry lint.

November 23d. Complains of some pain in the part, which seems to be a little inflamed. Let an emollient poultice be applied.

November 24th. The inflammatory symptoms are entirely removed. Discontinue the poultice, and dress with lint as before.

November 26th. The wound much contracted, but the granulations appear rather unhealthy; the lint which was applied to them was directed to be wetted with a solution of the sulphate of copper.

From this period there was a gradual amendment till about the middle of December, when he was discharged from the Hospital, in every respect perfectly well.

January 1, 1814.

V.

OBSERVATIONS on the YELLOW FEVER of *Virginia*, with some REMARKS on Dr. JOHN MITCHELL's Account of the Disease; in a letter from the late CADWALLADER COLDEN, Esq. of New-York, to the late Dr. JOHN MITCHELL, of *Virginia*, dated

Coldenham, June 8th, 1745.

Sir,

WHEN Mr. Franklin* favoured me with a sight of your treatise on the yellow fever, I was obliged to go from home, and to be absent for some time; and being scrupulous of detaining it, or of taking any copy of it without leave, I thought myself obliged to return it without having time to consider it, otherwise than cursorily, not doubting but that I would soon have the pleasure of seeing it in print. The pleasure I then had in reading it, was the only cause of making the remarks I then sent to Mr. Franklin, from a desire that you might have every hint that I could suggest to make your performance more perfect.

I have for many years declined the practice of physic, and any thoughts I now entertain on that subject, are only by the way of amusement, to fill up a vacant hour in a solitary part of the country; and for this reason you can expect little else from me than mere speculations, and which must always give place to that knowledge which arises from accurate and judicious observation. What I then wrote was in an evening while I was abroad, deprived of company and conversation, and had no time to revise what I had wrote, but left it with

* Afterwards Dr. Franklin

my son (a boy) to copy from my extempore scrawl, and to forward to Mr. Franklin. After I have told you this, you will the more readily believe that I did not expect so much notice to be taken of it as you have done. All that I expected was, that from these hints you would re-examine, and perhaps alter some expressions, which I thought might lead the ignorant or unwary into mistake.

Now, sir, the manner which you have taken to answer the objections which I had made, is so much to my heart, that I think myself happy in having given occasion to it; for it gives me hopes of an epistolary correspondence with Dr. Mitchell, who, (though I do not otherwise know him than by the papers Mr. Franklin transmitted to me) has gained that love and esteem, which candour and knowledge can only procure. I can promise you very little in return for the pleasure I hope from you, if you will favour me with correspondence by Mr. Franklin's means, but that I will very cheerfully serve your curiosity in every thing that is in my power.

After this I promise never to make so long a preamble, and shall begin to treat you with that philosophic freedom, which I would desire of you and all my friends on the like occasion.

I must repeat what I wrote in the paper to Mr. Franklin, that I have never seen any ill of the yellow fever, and hope I never shall, and therefore I can only speak speculatively of that distemper. When you wrote of the inflammation of the stomach, which, as you observe, (and I believe truly) is a constant concomitant of this distemper, I would advise you to distinguish it, in the most express terms, from a genuine inflammation; for if by any means it be mistaken for a genuine inflammation, such as in a pleurisy, or the inflammation of the stomach in the proper sense, it will unavoidably give occasion to dangerous mistakes in practice. If I have any notion of this distemper, (and the clearest conceptions that I have been

able to form of it are from your writings) this is far from an inflammation in the proper sense of the word, arising originally from a stagnation of the globular parts of the blood in the capillaries, but it is such a kind of inflammation as is occasioned by burning or corrosive humours applied to the parts; all your observations lead me to think so; and if this be the case, it requires a very different method of cure from that of inflammations, in the proper sense of the word.

I am still of opinion, that the inflammation and gangrene succeeding it, are entirely occasioned by an extraordinary acrimony in the bile, which has its first rise in the serous or lymphatic humours, (for I distinguish them,) and that from this acrimony, and the solution of the bile as a consequence of it, the icterus or yellow colour ensues, and indeed all the most terrible symptoms of the disease.

I readily agree, that purging by lenitives may be useful in some cases, in the winter season especially, as likewise bleeding, and this chiefly in the spring; for the same is observed in the small pox and measles. But may I be allowed to ask whether these lenitives may not act as topical applications to correct the acrimony of the bile, and to defend the coats of the stomach from it? For in the cure of these most terrible symptoms, I should expect something considerable from topical applications, such as immediately correct or blunt this acrimony, or defend the parts from it without stopping the perspiration of the volatile fiery parts by perspiration. I still must advise, to prevent mistakes in the ignorant or unwary, that the most express terms be used to signify that all evacuations, (except of the fiery parts by insensible perspiration) before the crisis of this distemper (as in the small pox and measles) are against the general rules of cure; and that however in any particular cases they may be necessary, that these are only exceptions to the general rule, occasioned by the particular circumstances of these cases.

I am far from thinking that sudorifics may with safety be used at any time in this or such like distempers. No: I take it to be a dangerous practice. I am of opinion that all fevers, but in a more particular manner contagious fevers, require a certain degree of velocity to be kept up within certain limits, if too slow or languid, or too high or rapid, that the noxious matter may separate at the proper distance, so as to be thrown off through the skin at the crisis, either by sweat or more insensible perspiration. If the velocity be too small, the noxious matter separates in the glands, whose excretories empty into the intestine and within the body, and whose juices are of animal use, and designed to re-enter the circulation. But if the velocity be too great, then no separation of the noxious matter can be made, and it is for this reason that untimely and hot sudorifics throw all into confusion. The fevers require a certain period for separating and concocting the noxious matter; the want of attention to this, and the impatience to have a speedy cure, I am afraid has undone many. The period required in every kind of fever, can only be learned by observation, and likewise the limits of the velocity necessary for the separation, and concoctions afterwards of the noxious matter. This period and degree of velocity in the same distemper, is different in different climates, seasons, and constitutions, and therefore require a constant, accurate, and judicious observation.

In my opinion, the generally safe method of regulating the velocity in these malignant fevers, is not by evacuations, but by giving vent to the fiery particles by a *free perspiration*, and by such means as do not add fuel to the fire; and for this purpose diluents, impregnated with mild attenuants, and with such medicine as, from observation, have some specific virtue in correcting the acrimony of the juices, and to dispose them to concoction, have from the observation of most writers been most in use. At the same time special care must be

taken of the atmosphere which immediately surrounds the sick, as to heat and moisture ; for it is impossible without this care to preserve a free perspiration ; and as this is not always in our power, for this reason, as well as others, a cure is not in the physician's power. The tar water (if credit may be given to Dr. Berkeley's observation) seems to promise as much for these purposes as any thing I know ; as all balsams are known to be attenuants, and to preserve from that particular acrimony which produces corruption and gangrenes, and the water impregnated with tar, is able to pass every where, and to reach the utmost recesses. It has still the further advantage of no way offending the stomach, nor does it heat or increase the fever, but allays it and thirst. These properties have been confirmed to me by some few observations which I have made, and therefore I cannot forbear recommending it to further experiment.

What you observe, sir, of the use of purging after the crisis, I am persuaded, is a very useful observation, and probably ought constantly to be done, as in the small pox, and more especially in the measles. Neither do I in the least blame your practice of purging in the beginning, by lenitives in the winter, or bleeding in the spring, or of using either of them at other seasons, in particular constitutions or emergencies ; for all these are found useful in the small pox, though every one knows that the crisis is by a quite different method. All I mean is, that this practice be set forth with sufficient caution to others, who have not your skill and prudence ; and you know how necessary such caution is to the practitioners in America.

Notwithstanding of my writing my opinion so largely, I believe that you and I agree in our sentiments on these diseases ; but as I was exceedingly pleased with your performance, I am very desirous that you would omit nothing to make it as perfect as possible, and I submit it entirely to your judgment what I have now wrote, because your knowledge, aris-

ing from observation, is upon a much surer foundation than mine ; and I most earnestly entreat of you, that you will no longer deprive me of the pleasure, and the public of the benefit of your treatise.

I am, Sir, your most humble servant,
CADWALLADER COLDEN.

VI.

*Additional Observations on the YELLOW FEVER of Virginia ; addressed to BENJAMIN FRANKLIN, by the late Dr. JOHN MITCHELL, F. R. S. &c.**

IN the short account of the yellow fever, which I left with you at Philadelphia, I have not endeavoured to establish any theory, or even to make any deductions from any established theory of that, or like diseases ; but have only delivered a few matters of fact, as they occurred to me in practice, (which are chiefly or only such as I thought were either new or not well confirmed and known before,) as a foundation to build a theory upon, and on which to deduce a rational cure of this disease ; and it is such which I humbly conceive may be most pertinent to the laudable designs of your society, of promoting rather than repeating the knowledge of the arts and sciences ; nor have I either health or leisure at present,

* In the former part of this volume we inserted entire Dr. Mitchell's Account of the Yellow Fever of Virginia. By the publication of the present additional observations, the public are in possession of all the writings of this distinguished philosopher on this interesting subject. These observations, it seems, were intended by the author to be presented to a society for the promotion of useful knowledge, at that time existing in Philadelphia, and which afterwards was reorganized under the name of the American Philosophical Society. By a reference to the Register, vol. II. p. 203, the reader will find a copy of the original letter, relative to the formation of this society, addressed to the late Dr. Colden by Dr. Franklin.

to deduce any theory or particular applications of it, from these *data*; however, I am glad to see myself so well prevented in this by your worthy colleague, Dr. Colden, as far as relates to malignant fevers in general, in this paper which you favoured me with. But as all diseases are generally attended with some peculiar and distinguishing symptoms, whereby they differ very materially from those of the same general denomination, especially in their cure, so I shall mention the concomitants of this disease, which seem to distinguish it as much from other malignant and pestilential fevers, and are to be had as much regard to in the cure, as the eruption of pustles in the measles or small pox, or of carbuncle and buboes in the plague; for beside the general affections of the solids and fluids, we must likewise have particular regard to the symptoms which they produce in the cure of diseases.

The first of these concomitants of our yellow fever, which is so material to be regarded, is an inflammation of the stomach, or liver, or both, with the adjacent parts. This appears not only from dissections, but from all outward symptoms or appearances of the disease, to be a most constant and aggravating circumstance of it; inasmuch that I never knew any one to die in this disease, without manifest tokens of this inflammation of the stomach or adjacent parts: this, as well as the inflammation of other *viscera*, generally of the brain, it is true, sometimes happens in other fevers of this class, but not so constantly, and almost surely, as in this. The next appearance of our malignant, or rather pestilential fever, as it may be called, which ought to be regarded, is an icterus, or yellow effusion. This, it is true, has imposed upon some so far as to make them take this symptom for a cause; to take this nominal, for the real essence of the disease; whereby they reckon this fever to be entirely of the bilious kind; but it would be equally wrong, and of as bad consequence almost, in practice, to have no regard to this most fatal appearance in

the disease, as to deduce its nature solely from thence. These two constant concomitants of the disease, wherever it is severe and mortal, joined to the general state of the fluids, which is very well explained by Dr. Colden, may give us a good idea of this disease, and point out the several indications of cure. The principal of these indications, which has been so well explained by many, is sweating, or at least promoting a constant *diaphoresis*, well known to be necessary in all malignant fevers. But, alas! it is much easier to propose a general method, than to perform a cure, when we come to practice; for that accurate observer, *Sydenham*, tells us, that the method which will prove successful in one year, (not to mention particular cases) will be prejudicial in another. Thus, in the years 1737 and 1741, when this disease was epidemic in *Virginia*, the sick could not be made to sweat in the winter and spring seasons; at least, not so plentifully as was necessary to check the violence of the fever, and avert the impending inflammation; which, indeed, is very often the case, when this distemper is very severe; for you must observe, that it differs as much in degree, at different times, as the measles or small-pox does. All heating sudorifics, in these cases, bring on the inflammation, and hasten on the gangrenous state of the *viscera*; and plentiful bleeding (which I have known to be urged by some in these urging occasions) causes a no less fatal dissolution of the fluids, or mortal debility, both which are but too well known in practice, and are easily deduced from the theory of these diseases. It is upon such occasions, as you may perceive, that I recommend purging in this disease, agreeably to the practice of all physicians who have had any considerable experience in it; for there are no parts, through which the lymphatic humours (which, as Dr. Colden justly observes, are the principal seat of this distemper,) go off with more ease

and more freely, than through the glands of the *primæ viæ*. Helvet. Anim. Econ.

Another advantage, and even necessity of purging, is obvious to be perceived from the necessity of cleansing the *primæ viæ* of their feculent and corruptible contents, which is of great service, when they come to be so severely affected. When this alone is indicated, by purging it may be done without any danger of driving the humours to the bowels; for the action of lenitives is no more to be referred to purgation, than the washing of the skin is to be referred to the action of sudorifics. *Pitcairn. Dissertat. de Febr. curat.* But it is very certain, what Dr. Colden rightly inculcates, that purging in this disease, requires much medical skill and prudence, (as well as most other applications in it,) and ought not to be rashly attempted; for which reason I have been more particular in explaining the reasons of it, and wish I had leisure to be as particular in delivering the practical observations which confirm and illustrate this part of practice, and the cautions requisite in it; but in general it might be observed, that it is rather out of necessity than choice, that we have recourse to purging before, or rather, at the decline of this disease. But on the decline it is so necessary that I never knew the yellow effusion to be carried off, except in one single instance, without a purge; the reason of which appears to be the viscidness of the bile, which occasions this icterus, which cannot pass off by other outlets. Dr. Colden desires to know, if any recover after purging without sweats? I can inform him, that sometimes they do, although sweats are the most general critical evacuations of all fevers. But the miasmata of contagious fevers, seem to be so subtile, that when they are disengaged from the more viscid humours, they make their escape insensibly through the pores of the skin and other parts; by which you may see some recover suddenly and surprisingly, without the least perceptible evacuation.

As to the relapse, which Dr. Colden thinks may proceed from the sick being exposed to the cold air after the fever, you must observe, that this was not an accidental, but a constant circumstance of the disease, at least at four times, when it has been epidemic in Virginia, and as much to be expected, as the return of an intermittent fever at its stated periods, whenever care was not properly taken to prevent it. What seemed to aggravate it most, was a too plentiful or gross diet. I imagined it might proceed from some lentor of the fluids, not removed nor evacuated, on account of the extreme debility of the body, which might afford, as it were, a *nidus*, for the subtile contagious vapours; in the same manner as some people, who have a great fluidity of their humours, and free excretions, never contract any contagious disease; whilst others, whose fluids are more viscid, can hardly avoid it, and suffer most severely from them.

P. S. What I understand by the lymphatic humours being affected in this disease, is chiefly a morbid acrimony of all the serous parts of the blood, which dissolves or assimilates the globular part of the blood, whenever the circulation is languid. Qu. Whether the contagious vapour, which affects the blood in this manner, is not derived from the internal, rather than the external, surface of the body? and whether the affections of the bile and liver, do not proceed originally from the same cause or minera of disease: since most of the blood which is carried to the liver, and from which the bile is secerned, proceeds from the stomach, intestines, pancreas, &c. by the *venæ portarum*, very different from the other veins of the body? and whether this may not make discharges from the internal surface of the body more necessary than in like diseases of the malignant kind: since, in this fever, the morbid humours not only proceed from thence in all probability, but likewise fix there; whilst in others of the eruptive kind, as they generally are, they are thrown on the external surface?

VII.

OBSERVATIONS on the FEBRILE DISEASES of Savannah;
in a Letter to Dr. HOSACK, from JOHN LE CONTE, Esq.
Dated,

Woodmanston, December 18, 1809.

Sir,

I LOST no time on my arrival at Savannah, in making the necessary inquiries relative to the fevers of this country; the result of these follow. It was with extreme difficulty I could obtain what information I have. Most of the physicians seem averse to speaking on the subject; and what I now communicate, is chiefly derived from former observation, and from a physician of the same way of thinking as yourself. For an answer to your two first queries, I must refer you to an account of the climate and situation of Savannah, already given in the Medical Repository, by Dr. White.

The sickly season in this country usually commences about the latter end of August, or the beginning of September, and continues through the whole of the ensuing month. Although strangers, particularly Europeans, are liable to fall victims to the unhealthiness of the climate before that time, yet this is seldom the case with the natives, their constitutions being more accustomed to the extreme heat of the weather during those months; for it must be observed, that the temperature of the air does not begin to moderate until much later in the year. The disorders most prevalent during the period before stated, are intermittents of every kind, from those of the most simple, to those of the most compound type. These sometimes run into each other, so that a patient may be seized with a tertian, which in a few days will change to a quotidian, a double tertian, or a tertian in

the form of a quotidian ; and not unfrequently end in typhus. This was particularly the case this autumn ; but whether from neglect, improper treatment, or some peculiar state of the atmosphere, I am unable to say. The typhus fever, as a primary disease, very seldom occurs. They have besides these, another fever, commonly called *yellow fever*, but which, I have no doubt from its symptoms and history, you will pronounce to be nothing but the bilious fever.* I pass over any thing more that may be said on the subject of our intermittents, as I know your chief attention is directed to the other disease. When a patient is first seized, he complains of great lassitude and anxiety ; headache, generally confined to the forehead and temples ; not unfrequently of soreness of the flesh and bones ; pain in the back, extending from the neck through the whole length of the spine ; the same sensations in the legs as are experienced after severe labour, or excessive exercise ; pains in the loins, stomach, breast, or spleen. These symptoms are three or four days making their approach ; in others, they are hurried through in as many hours ; the fever comes on, and the unhappy sufferer dies in the space of twenty-four hours. Should he not be attacked so violently, the fever commences with a vomiting of green, yellow, or black bile, in large quantities, and very offensive to the smell. After this, it increases, attended with a full, hard, and frequent pulse, from ninety to one hundred and twenty in a minute ; intolerable thirst, some delirium, and a regular remission every day ; the stomach being much disordered, and the pains that were before felt, still continuing.

* The reader will find a very interesting communication on the fevers of the southern states by Dr. Norcom, published in the Register, vol. 1. p. 17. Dr. Norcom properly discriminates between the ordinary fever which attacks the native, and the more malignant form of the same disease under which strangers, not habituated to the climate, suffer. Hence this disease is justly considered as materially different from the yellow fever of tropical climates.—ED

As the disorder gradually approaches its crisis, the skin and eyes become yellow; the tongue is covered with a furred coat, tinged in the middle, of the same colour with the skin. In some the eyes are a little bloodshot, but never so much as to be called inflamed; hemorrhages never occur. At the end of ten, twelve, or fourteen days, the patient either recovers or dies; but death is never attended by real black vomit. I heard of one case, in which the patient vomited up a black flaky substance, resembling coffee grounds; but as he afterwards recovered, it was found, on inquiry, that the night before his attack with fever, he had been engaged in a drunken frolick, and had received a severe blow in his right side: the substance therefore voided from his stomach was nothing but coagulated blood.

The method of cure that proves most successful, is that which you yourself adopt in the same disease at New-York. The bowels are first cleansed by emetics and gentle cathartics; and afterwards such medicines as tend to promote perspiration and lessen the violence of the fever, are administered. Bark, either by itself, or compounded with other tonics, is, I believe, seldom used, except when the patient is convalescent; and bleeding, unless it be in such small quantities only as will relieve the headache, is generally thought prejudicial. If the fever is not so violent as to prove fatal in a few hours, it is easily subdued. The fondness which many physicians have for mercury and profuse bleeding, probably destroys more than the disease would were it left to itself; hence by many it is looked upon as more dreadful than it really is. This is the substance of what I have learnt on this subject; should it give you the satisfaction you wish, I shall be highly pleased, and more than paid for any trouble it has cost me.

Yours, &c.

JOHN LE CONTE.

excellent chapter on the economy of salt, may be seen in "Bordley's Notes on Husbandry and Rural Affairs," to which I beg leave to refer you for a variety of important and valuable information on this subject. (See the review of this instructive work in *Med. Rep.* Hexade I. vol. iii. p. 276.)

Knowing well your correctness of thinking and acting on the great question of our pestilential distempers, I have no doubt of your support, when I entreat you to assist me in putting our fellow citizens on their guard against the extensive and fatal evil of employing English salt to preserve any kind of flesh or fish from putrefaction. The manner in which *pure* muriate of soda acts in staying corruption, I formerly explained, in a paper addressed to Professor Woodhouse (*Med. Rep.* Hex. I. vol. ii. p. 274); but this Liverpool salt is so *impure* that it does not quadrate with that theory, but stands in opposition to it; and by its diversity, indeed, confirms it. In discussing a subject so complicated and abstruse as that of our annual endemics, it is not a matter of surprise that they who have little industry and small capacities should fall into the belief of their being contagious, and of foreign derivation. Some of them will carry this error with them to their graves; but the majority, especially of the rising race, will take the right impressions without any difficulty, and continue to reason and to conduct properly all their days.

ARTICLE V.

OBSERVATIONS *on the* CONTAGIOUSNESS *and* IMPORTATION *of* YELLOW FEVER. *By* THOMAS DANCER, *M.D. of Kingston, in the Island of Jamaica. Addressed to the Editors of the Medical Repository.*

INDEBTED as I feel myself to the Medical Repository for much valuable information, I should be glad to evince my gratitude by contributing to so useful a publication. As I am impelled by the same motives that appear to actuate the ingenious writers in this miscellany, viz. the discovery of truth and the improvement of medicine, not by any desire for literary contention, I shall hazard some observations on a point which, being one of the greatest interest to humanity, has chiefly engaged the attention of the American faculty, and called forth their talents into exercise, viz. *the contagiousness or non-contagiousness of Yellow Fever, and whether the Yel-*

low Fever is an imported disease, or one wholly of local and domestic origin.

It is greatly to be lamented that a due reverence for long established doctrines on the one hand, and a laudable ardour for discovery on the other, should alike tend to mislead us in our researches; and that the investigation of truth, in a matter of the greatest concernment to mankind—one on which the very existence of society in a great measure depends, should become an undertaking of almost insuperable difficulty. How else could it happen that so many medical men, distinguished for talents, and no less so for a spirit of liberal and candid inquiry, should differ so widely from each other, and, at a short distance of time, from themselves; many of them having been led to change their opinion on the subject (as it is possible I may ultimately mine); which serves to show that, however simple and plain the question may seem, it is nevertheless involved in much intricacy. I will not presume that I can say much to elucidate it, or that I am competent “to set it in the best light it is capable of receiving, in order that the question may be brought to a fair and ultimate decision;”* but I shall obey the invitation given me of presenting my sentiments, if haply they may serve to bring such medical men as are disposed to consider the subject without prejudice, and apart from all other matters with which it is supposed† to be connected, to a somewhat nearer point of agreement.

When “facts are more scrutinized, the advocates for either opinion will possibly find a ground of compromise.”‡ This is an event devoutly to be wished: for such differences among medical men are not creditable to the profession, nor conducive to the benefit of mankind.

A science like medicine will not always admit of definite language. This is apparent on many occasions, and is particularly so in respect to the terms *infection* and *contagion*; from the confounding of which together, or from assigning to each novel significations, proceeds, in a great measure, the obscurity that rests on the present question. Their etymological import, so critically ascertained in some late inaugural disserta-

* Med. Rep. Hex. I. vol. vi.

† Some appear very unwilling to admit of the supposition of contagion, because of the consequences that might follow: but if contagion really does exist, are not the consequences of incredulity much more to be apprehended? I do not mean to defend the old quarantine regulations: they are absurd.

‡ Dr. Scaman.

tions,* is of little moment. It is the sense in which they are ordinarily understood,† by which we must be guided in this inquiry; and if we are to adhere to this, the *pestilential yellow fever*‡ must be considered a *contagious* one.

Such diseases as the camp, hospital and jail fever, with ordinary typhus, which derive, or have been supposed to derive, their origin, not from marsh exhalations, &c. but from human effluvia, or emanations proceeding directly from the sick body, or else from substances imbued with these, have always hitherto, at least since the time of Sir John Pringle, been denominated *contagious*,§ in contradistinction to those arising as afore-mentioned, which it has been agreed to call *infectious*.|| That the pestilential yellow fever classes with the former, and not with the latter, there can be no manner of doubt; but if we are to adopt the new-coined distinction between infectious and contagious diseases, viz. that contagious diseases are only such as are occasioned “by morbid animal secretion, or by the vitiated product of living vascular action, like small-pox, vaccina, measles, lues venerea, &c. and which can affect the constitution only once,”¶ then the dispute is at an end. We may, however, be allowed to ask, Is this novel distinction so obvious as to be understood,** and so satisfactory as to be ad-

* Inaugural Dissertation on Dysentery, by Dr. Quackenbos. Inaugural Dissertation on the Origin and Propagation of Yellow Fever, by Dr. Bayley. New-York. 1802.

† Contagion is that peculiar morbid poison which is prepared in the bodies of living animals, and which is communicated to others by contact, or by approaching too near them. Such was the acceptance of the word while it remained unwarped by prejudice, and till restricted to such diseases as occur only once, like small-pox and measles. (Med. Rep. Hex. I. vol. vi. p. 12.)

‡ A distinction is to be made between the endemial yellow fever and the pestilential yellow fever. (See Chisholm.)

§ “It is now generally allowed that the effluvia of living persons, confined in close situations, produce the poison of fever.” (Ferriar.)

|| Cullen, Pringle, Lind, Chisholm.

¶ See Med. Rep. Hex. I. vol. v. p. 186. vol. vi. p. 10. The former part of this definition may, perhaps, be admitted, but not the latter.

** I cannot help thinking that the lately adopted distinction between infection and contagion is ambiguous and inapplicable. Who can say with certainty that contagion belongs only to *secreted* matters, and that it is not attached to the matter of perspiration, and the halitus from the lungs, and other *excretions*? The advocates for the new distinction are not at all agreed how to class diseases under it. By some, *lues venerea* (as depending on specific virus secreted) is considered a contagious disease. Happy would it be for mankind that it answered the definition, and that it occurred but once to the same person. (See Med. Rep.)

Rather than allow yellow fever to be contagious, like hospital fever, jail

mitted? I presume otherwise. Do none of the diseases depending on a specific secreted virus affect the constitution only once? Does it appear that there is no difference between vegetable and animal putrefaction? Can the emanations from the *living* body be considered of the same nature with those from dead animal matter? * May not the effluvia of the human body, under disease, be considered as having a different nature from what they have in health? and may they not, under many diseases, be *specifically* so?

We are confessedly alike ignorant with respect to the matter of infection and contagion; † but is there any just ground to conclude (although they should sometimes, as it is by many imagined, co-operate) they are the same, and that all fevers arise solely from one cause; or that typhus, jail, hospital, ship, and pestilential yellow fever, all originate in the same source as bilious remittent and intermittent fevers? If this were the case, *why should not the phenomena of each be the same?* But we see they are not so. There is an essential difference among them. They do not exist in the same seasons and situations, nor do they run the same course, &c.

It is become fashionable to consider the several kinds of fever as *grades* only of the same disease, and to talk of the different *states* of fevers, viz. the *gangrenous* state, &c. But fevers originate in so many different ways—they differ so much in their mode of attack, in their progress, declension and termination, that I must continue to think they differ in *genera* according to the remote cause. “The remote causes of fevers are of two kinds, each producing a class of fevers, whose cha-

fever, &c. it is by others confidently denied that these are so, and the fact, so well established, of prisoners having communicated to the judges and court at Oxford, &c. a disease they had not themselves, is indecently ridiculed. On the other hand, Dr. Cathrall (a champion for the new distinction) allows that typhus, hospital fever, &c. do not depend on a putrefactive process, but on a *vitiating secretion*: if so, why may not the pestilential yellow fever depend on the same?

* See Ferriar, *Med. Hist.* vol. i.

† It is, indeed, pretended that the one consists of *hydrogen gas*, or hydro-carbonate, and the other of the *gaseous oxyd of septon*. I am fully sensible of the importance of the new discoveries in chemistry, but I do not see that they are applicable to explain the composition of pestilential effluvia. As well may we attempt to explain the nature of any specific contagion, viz. that of small-pox, lues venerea, and the poisonous odors. Are not all these combinations of oxygen, hydrogen, and azote? but who can say in what proportions, or explain the *quomodo* of their combination?—For the fallacy of eudiometrical experiments, see Dr. Rush, *Med. Rep.* Hex. I. vol. vi. p. 163.

racter depends on the nature of the peculiar fluid constituting the base of the morbid effluvia.”*

Upon what does this difference among fevers depend? Certainly upon the remote cause producing them,† which cannot be always putrefaction simply considered, for it does not appear that infection (contagion) always arises from putrefaction,‡ and it is known to spread without its aid.

It would appear, then, that there is some material or essential difference between animal contagion and ordinary putrid exhalations, although it has been supposed there is some “intimate if not inseparable connection between them.”§ There may be, perhaps, no such connection, or no effect arising from their chemical union; but they may reciprocally dispose the body to be acted on by each other. This would appear very evident from numerous acknowledged facts. Whichever opinion is admitted, it will serve, in some degree, to remove the ambiguity attending this difficult subject.

That the noxious effluvia and halitus from sick bodies may adhere to clothes, bedding, furniture, &c. and thereby become a seminum or fomes of the disease,|| will scarcely be denied by any one; and the advocates for non-contagion will not pretend that it cannot be so imported, or that the cause of it cannot be so imported;¶ but then they affirm it cannot by

* Chisholm, vol. i. p. 281.

† Ibid.

‡ Persons concerned in putrefactive processes, and living in the neighbourhood of shambles, church-yards, &c. are not peculiarly liable to fevers. Infection or contagion is rarely, if ever, received from bodies who died of contagious diseases; not even from dissecting them, unless by inoculation. (See Ferriar, Med. Hist. and Facts, vol. i.)

“It must not, however, be concealed, that noxious effluvia do frequently arise from putrefying bodies in a *certain state* (perhaps from confinement); but the diseases produced thereby are inflammatory, not pestilential.” (See as above.)

§ It appears, from the testimony of many medical writers who have had great opportunities for observation, that they frequently act in conjunction, and that fevers are combined. Of this opinion are Chisholm, Lempriere, Jackson, Lind, Clark, &c.—*Putrid effluvia, generated on board of ship, may have the effect of changing the type and nature of the original fever, by superseding the action of the marsh miasmata.*

|| With what force the contagious matter generating fever will adhere to furniture, and the walls and floors of rooms, may be seen in many extraordinary cases, particularly in one related by Dr. Broeklenby, in his Diseases of the Army. Six or seven persons died in succession of a malignant fever, being put into an infected room, notwithstanding every pains was taken to purify it, each time it was vacant, by fumigation, ablution, &c. At last the walls were new plastered, and the floor planed, and it then became safe. Was this contagion common putrid matter?

¶ See Inaugural Dissertation by Mr. Quackenbos.

such means be communicated, and become epidemical. Is not this an assertion without proof?* Besides, it would be very extraordinary that a disease should not be communicable through the same means by which it was received.

It appears to me, therefore, however sufficient local causes† may be to generate a fever of this kind, that all the arguments which have been so industriously collected, and so strenuously urged against the contagious nature of it, are far from being conclusive. Like jail fever, &c. being once generated, it is susceptible of being propagated in the same manner, viz. by effluvia from sick bodies, and from these adhering to clothes, &c. and it is not impossible or improbable that “the spark which first kindled up the epidemic in many places might have been imported.”‡

Having thus stated, as briefly and explicitly as possible, my sentiments on the subject, I shall conclude by making reference to the facts and circumstances on which my opinion is founded.

In the first place I must refer to the facts stated by Dr. Chisholm, which, notwithstanding their being called in question, have not yet been invalidated, and remain, in my judgment, unanswerable.

2dly. Although Dr. Chisholm has been represented as being almost the only advocate for contagion in the West-Indies, the contrary of this is the truth. Most of the practitioners in the West-Indies concur with him, and various facts and cases have been brought in proof of what he has stated.

* There are various instances quoted of the disease having been imported from the West-Indies in the clothes of those deceased. (See Lining, Rush, &c.)

† It is the opinion of many, that putrid effluvia may of themselves, in persons highly predisposed, generate the disease, and that from them it may be communicated, and become epidemic. (Med. Rep. Hex. I. vol. i. p. 321. See also Chisholm.)

‡ Seaman.

Some persons, rather than allow of the existence and operation of contagion in any case whatever, refer epidemical diseases, 1st, to an unknown constitution of the air; 2dly, to a decomposition of the atmosphere by caloric—to the aspect and conjunction of the heavenly bodies—to earthquakes, volcanoes, &c. and, lastly, to the particular curse of God. If any such there are who still delight in mysteries, and in explaining things in the most far-fetched and improbable manner, let them talk of occult qualities, and let them believe, with Dr. Moseley, that carbuncles and buboes in the plague are owing to the gross food of the Turks. Is it not to be regretted that men really respectable for their talents should indulge in such whimsies; and, while arraigning others for their credulity, should exhibit such melancholy proofs of it in themselves, betraying a weakness bordering on puerility or dotage?

Many similar instances of the contagious nature of yellow fever are related in the Medical Repository, which ought to have at least as much weight on the one hand as any stated to the contrary should have on the other.*

It is well known to the practitioners of this island, that the pestilential yellow fever prevails only on certain occasions—that it generally begins among seamen and soldiers lately arrived from Europe—that it has no apparent connection with local causes—that is to say, it makes its appearance during the most healthy seasons, and in the healthiest situations; while, on the other hand, it is never found to prevail in unhealthy or marshy spots.

Lastly, it appears, contrary to what has been again and again asserted, to be directly communicable from one person to another, and from a single person to many. For example, one man only, going on board an infected ship, and contracting the disease, shall communicate it to several others, who never had been otherwise exposed to the infection.† Many histories in proof of this might be adduced,‡ but I deem the following letter from my friend Mr. D. Brown, assistant surgeon to the 6th battalion of the 60th regiment, quartered at Up-Park Camp, to be more than sufficient.

* See Med. Rep. Hex. I. vol. vi. p. 160.

Dr. Rush has mentioned a fact which he justly terms a very important one, viz. that if a person who had taken the yellow fever in town went to a family residing in a healthy inland situation, he did not communicate the fever; but, on the contrary, if he went to a family residing near the river, that is to say, in a swampy or unhealthy situation, the family caught not a *bilious remittent*, but the *yellow fever*. This might be deemed proof sufficient of the contagious nature of yellow fever. But Dr. Rush will not allow it. He says that the *exhalations* from persons in yellow fever act on others as a *stimulus*. This is what the contagionists will not cavil about; but they will not allow this stimulus to be similar to *heat*, *intemperance*, or other exciting causes. It must be a stimulus *sui generis*, or it would not produce yellow fever. That yellow fever patients did rarely communicate yellow fever, or any other fever, to persons in healthy situations, admits of an easy explanation.

† This Dr. Rush has admitted, but has explained the matter differently. (See Med. Rep. Hex. I. vol. vi. p. 160.)

‡ Agreeable to the information I have received from several country practitioners, the crews of ships stationed at the out-ports are generally healthy till one or more persons fall sick; but as soon as a single instance of yellow fever occurs, the disease spreads from one to another till it goes through the whole ship, and afterwards from ship to ship. The disease has also been traced from estate to estate fifteen miles into the country.

Copy of a Letter from Mr. DAVID BROWN, Assistant Surgeon to the 60th Regiment, Up-Park Camp, to Dr. DANCER.

Military Hospital, Sept. 10, 1803.

DEAR SIR,

In respect to the fever that has lately raged with such violence in our hospital, it was *without doubt contagious*.

The reasons I have for entertaining this opinion are shortly these:

1st. No local cause existed that could produce the disease.*

2dly. It went progressively through the battalion; the persons *nearest* the sick being always the *first* who were affected.

3dly. The medical gentlemen who attended (five in number) were all taken ill; one of whom died, and the rest recovered with difficulty.

4thly. The sergeants and orderly men were *all* affected, and many of them died. But,

5thly. What was most singular, *every man employed in shaving the sick fell a victim to the disease.*

These are a few plain facts, known to every officer and private in the regiment.

I remain, dear Sir,

Yours, &c.

D. B.

Not to extend this paper beyond the prescribed limits, I shall forbear any comment on the above. The conclusion is not to be withstood!

Kingston (Jamaica), Sept. 18, 1803.

* The situation of Up-Park Camp is as healthy a one as can be well imagined, being two miles from the sea, at a considerable elevation, and fully exposed to the strong sea breezes. There are no swamps or other sources of putrefaction in the vicinage. The barracks are not crowded nor filthy. The hospital, which is lately built, is a model for all others, being spacious, well ventilated, and clean, to almost an extreme of nicety. Yet, notwithstanding all these circumstances, upwards of ninety men have lately, in the space of a few weeks, and during a dry, healthy season, died of a malignant fever, having all the characteristics of yellow fever.

Dr. Ferriar says, "I have known a pestilential fever produced in a new raised regiment, in a quarter where regular troops are always very healthy, and where there is a constant ventilation of the briskest kind." It would appear that there was some fomes of contagion which showed its effects only with persons who had a susceptibility to be acted on.

ARTICLE VI.

ADDITIONAL OBSERVATIONS *on the NATURE of FEVER, and on the IMPORTANCE of REMEDIES applied to the SKIN. In a Letter from NOAH WEBSTER, Esq. to Dr. MILLER, dated New-Haven, Oct. 3, 1803.*

DEAR SIR,

IN my letter* to you of the 30th ult. I offered to your consideration some ideas respecting the proximate cause of fever. The following case, however trifling, may deserve to be recorded.

Some time in September last I was stung upon the back of my hand, by a worm which is common upon the maize plant; a worm chiefly of a green colour, and covered with sharp, prickly hairs. These hairs, when applied to the skin, occasion a sensation like that of nettles. The part affected soon became of a florid colour, to the extent of more than half an inch in diameter. The sensation was, in no slight degree, inconvenient. Within a few minutes, perhaps fifteen or twenty, as I sat writing, I observed the red spot on my hand to be covered with moisture, equal to that of the most copious sweat; although my skin, in general, was perfectly dry. This excited my curiosity, and I wiped off the moisture with a handkerchief. Within a minute, or less, the moisture occurred a second time, and was removed. This was repeated, perhaps, ten times; and, at last, the efflorescence of the part gradually disappeared, the skin resumed its natural colour, the uneasy sensation abated, and no further perspiration appeared. —In this instance the whole process of disease, from poison to recovery, was carried on and completed in about half an hour. The morbid action of the poison probably destroyed, at least in part, the tone of the skin and cutaneous vessels; a slight fever succeeded, accompanied with an accumulation of blood, which disappeared in a few minutes, in consequence of a copious excretion of moisture, which carried off the preternatural heat, while the parts were resuming their natural tone.

There are many considerations which incline me to believe that, while the saliva, the gastric liquor, the bile, the chyle, the lymph, and other secretions, are destined to carry on the process of deglutition, digestion, nourishment, and the dis-

* See page 124

charge of the fecal matter, the excretion by the skin is destined chiefly to carry off the superabundant heat. Indeed, no other means equal to this purpose seem provided by the constitution of animal bodies. The air undoubtedly receives a portion of heat from the skin with which it is in contact; but a dry air is an imperfect conductor, and by no means sufficient to answer the purpose. Aqueous particles seem by nature destined to this end; and hence the tendency of a moist atmosphere to occasion perspiration. The moisture relaxes the skin, and invites the discharge of heat, in an undue degree. This I presume to be the reason why a damp air occasions chilliness, or tends to occasion it, though sometimes counteracted by extreme heat in the air; and hence the debility occasioned by such a moist air. The heat and juices escape with a preternatural rapidity, leaving the surface of the body cold, languid, and prone to disease.

The proximate cause of fever, thus, is any obstruction of the natural discharge of heat; the primary or remote cause is any thing which induces debility in the system, and especially in the parts which secrete the necessary aqueous or perspirable matter. Whatever destroys or impairs the action of the excretory organs must occasion a preternatural accumulation of heat or fever. Where this action is only impaired, or partially obstructed, a slight fever ensues: where the obstruction is more general and entire, a proportional degree of fever must follow.

Many theories have been framed to account for the preternatural heat of the body in fever. But why should we resort to spasm, excessive excitement, &c. to account for one of the plainest operations of nature? All the heat of the body, which exceeds the temperature of the surrounding air, *must* be, and the most of it *is*, inhaled by the lungs; and why should we resort to any other cause for an unnatural degree of it, than to an obstruction which prevents its regular discharge?

What is local inflammation but an accumulation of blood and heat in a part, the vessels of which are so impaired as to be unfit to separate the red from the serous part, and to carry off the heat which is constantly conveyed to the part by the circulation? Is not topical inflammation cured by an abstraction of blood, and by epispastics, or other vesicatories and fomentations, which occasion a discharge of the serous part of the blood; in short, by renewing the excretions? Why is fever attended with a dry skin, but because every particle of moisture which can find its way to the surface instantly flies

off with a portion of heat? Philosophers are perfectly well acquainted with the capacity of vapour to contain heat; and the ordinary process of insensible perspiration seems to consist in the discharge of fluids in the form of vapour, charged with the heat imbibed by respiration.

The heat of summer occasions an extreme stimulation of the surface of the body, and an undue discharge of perspirable matter, as long as the vessels continue to perform their functions. But the preternatural excitement often induces indirect debility, and disables the extreme vessels to perform their functions. At the same time, an excessive stimulation of the viscera, and especially of the liver, occasions an undue secretion of the bile, a part of which is forced into the system in various directions, and urged to the surface through the perspiratory ducts, giving to the skin the yellow hue so common in summer and autumnal fevers. But it is probable that this fluid, being too viscid to pass freely through the capillary vessels of the skin, serves to clog those passages, and, finally, aid in producing fever in the system. This is *bilious* fever.

I am led to these reflections, in part, by experiencing the good effects of applications to the skin, in cases of chronic debility. I have, for two or three years, ceased to look for a remedy for this species of indisposition in the shop of the apothecary. For indigestion and languid bowels, a more natural and easy remedy is found in friction applied to the region of the stomach, liver and intestines. A brush (not a flesh brush, for it is too soft), used at night, before retiring to rest, until the body is covered with a glow, never fails to restore tone to the stomach, and invigorate the alimentary canal, so as to procure a natural discharge the next morning; and it is obvious that a languid liver is thus stimulated to secrete its proper fluid to lubricate the intestinal canal. How much better is this practice than to run to the apothecary for pills!

In cases of more confirmed chronic debility, and hypochondriacal affections, the brush may not be sufficient, and the warm bath may be more effectual. To a debilitated frame, whose skin is dry, and whose extremities are cold—in which the peristaltic motion is languid, and the stomach weak or swelled with flatulence—what a luxury is the warm bath! It warms equally every part of the body; relaxes and softens the skin, thereby restoring the excretions; gently stimulates the whole system; renders the circulation equable, and promotes all the secretions. From my own observations, I am inclined to believe that chronic affections, being occasioned

by want of exercise, and a consequent muscular debility, are to be mitigated chiefly by external applications. Nothing will cure them but exercise—action being the natural business of man, and, of course, his natural prophylactic. But friction and the warm bath, by invigorating the muscles, and restoring the excretions, relieve the viscera, or rather excite them to perform their functions far better than cathartics, astringents, and chalybeates.—The orientals, from the highest antiquity, have made great use of the warm bath; and the ancients suffused the body with oil, evidently with a view to relax and soften the skin, and keep the excretions free. The modern Turkish practice of rubbing and pinching the skin, at the time of bathing, is intended for the same purpose. These considerations, and many others, lead me to believe that, in modern practice, physicians pay too much attention to the viscera, and too little to the skin and muscles.

ARTICLE VII.

REMARKABLE SYMPTOMS *consequent upon an INJURY done to the SPINE, with Remarks. In a Communication from JONATHAN DORR, Esq. of Cambridge (N. Y.), dated May 23, 1803.*

ON the 22d of July, 1794, A—A—, aged 36 years, received a blow across the small of his back by the fall of a tree, which partially dislocated his spine between the first and second lumbar vertebræ, and which produced a considerable tumour, and an obtuse angle of the spine, with an entire abolition of all sensation and muscular action in the lower limbs, beginning on a circular line passing around the ossa innominata exactly over the head of the femur, and two inches above the ossa pubis. This was the lowest line of the least sensation, which was determined by puncturing the parts. As low down as another line, three inches above, sensation and muscular action was entire. From the upper to the lower line there was a gradual diminution of sensation. In this situation I visited him five hours after the accident. By adopting the method Mr. Bell directs, the bones were replaced. Stimulants were directed and applied. I visited him the succeeding day, and found his bladder violently distended, and a retention of fæces, without any more pain than a slight uneasiness about the region of the

THE
MEDICAL REPOSITORY.

Vol. VI.

NEW SERIES.

No. II.

ORIGINAL ESSAYS.

An Account of the Endemic Yellow Fever, as it occurred in the City of New-York, during the Summer and Autumn of 1819. By CHARLES DRAKE, M. D. Physician to the Bellevue Establishment.

THE public are already furnished with two able and circumstantial relations of this endemic by Drs. Pascalis and Watts.* The design of their labours was to ascertain its origin, and the laws which regulate its propagation; without attempting to describe the disease, assign its type, or point out in what it differed from our autumnal endemics of former years. That they did not attempt to accomplish more, is probably to be ascribed to the fact that neither of those gentlemen attended a sufficient number of cases, to enable them to detail the general concourse of symptoms with that degree of minuteness, which is desirable in such cases. Indeed, the same remark will apply to most of the physicians of the city, none of whom attended more than four or five cases, and very few even that number. As physician of the Bellevue Establishment, the charge of the hospital opened for the reception of these

* See A Statement of the occurrences during a malignant yellow fever in the city of New-York, in the summer and autumnal months of 1819. By Felix Pascalis, M. D. and Part 2 of Vol. I. Hospital Register, by Drs. Watts, Mott, and Stevens.

fevers at Fort Stevens, near Hellgate, gave me a more ample opportunity of observing the disease, and noting its symptoms, than fell to the lot of any other practitioner ; but at the same time I must confess, it was not so extensive as, under other circumstances, would be required of one who attempts to write its history ; which I had not undertaken but from the failure of others, and a persuasion that the deductions I have made, from the observation of sixteen cases, will be found to apply with sufficient correctness to the fever as it prevailed generally.

The yellow fever had not made its appearance in the city of New-York since the year 1805. Nevertheless, the constituted authorities had not remitted the rigour of quarantine regulations, to guard against danger from abroad, nor relaxed the execution of those wholesome police arrangements which are calculated to obviate all sources of insalubrity at home. This long respite from an epidemic calamity began to be viewed by many as a pledge of total exemption ; and measures, once deemed salutary, and submitted to with cheerfulness, were now felt to be prejudicial to commerce, and burdensome to the city. Fortunately for the cause of medical investigation, as well as humanity, these feelings had not been suffered to influence those who were charged with the execution of the health laws ; for, on the appearance of fever in the latter part of August and first days of September, such had been the rigid execution of the quarantine system, that the Board of Health were led, as if by intuitive discernment, to the cause and origin of the disease, and the consequent adoption of measures, which, while they were successful in an unparalleled degree in securing the city from the ravages of pestilence, have presented in a clear, insulated, and conclusive manner, the causes which engender and propagate our autumnal endemics.

The weather, for several weeks preceding the appearance of this endemic, was remarkable for its unusual and continued heat, the prevalence of southerly winds, and

great drought. The same state of the air, and the same deficiency of rain, were felt, in a greater or less degree, throughout the Atlantic coast of the country, and appear to have had a very sensible influence on the diseases of the season: for besides the appearance of yellow fever in the cities of New-York, Philadelphia, Boston, Baltimore, Charleston, Savannah, and New-Orleans, the villages and many parts of the country, especially in the southern states, suffered considerably from obstinate remitting and intermitting fevers, dysenteries, &c.

In the month of August, the thermometer in the city of New-York was never at noon below 80° Farh. and during several days of that month it ranged beyond 90°. The atmosphere at the same time was uncommonly calm, and very little rain had fallen for several weeks. so that vegetation in the surrounding country, and as far north as the Highlands, was seriously injured; the crops of all kinds were light, in many places they totally failed, and trees, even in the lowest forests, perished from the extreme drought. Such was the scarcity of culinary vegetables, that the city was supplied from distant districts of the country, and even from Albany;* a circumstance that had never before occurred.

The epidemics of 1798 and 1805 commenced at Old Slip, and the prevalence of 1819 was almost exclusively confined to a small district adjoining this commercial nuisance. Every case officially acknowledged to have been yellow fever, was satisfactorily traced to this spot, except two, and some doubts respecting these induced many to believe that these persons also received the disease by visiting the infected district. What are the circumstances, of this locality, it may be asked, to originate these pestilential fevers? Is it that this slip is appropriated to the use of vessels arriving from West-India ports, and other places within the tropics, where yellow fever prevails?

* Distant from New-York 150 miles.

So far from it, that it is almost exclusively occupied by coasters, a very small number of which come from ports south of Baltimore; and we must look to the actual condition of the slip and its vicinage for an explication of their rise and progress. This slip is very shallow, and one of the longest and most land-locked of any within the limits of the city, situated in the lowest and oldest part of the town, and further rendered liable to the accumulation of filth from an extensive sewer which empties at the head of it. Its filthy condition, and that of its immediate neighbourhood, at the time, was such as to attract the notice of the Grand Jury, who represented it as containing much putrescent matter, exposed on the recession of tide water to the influence of a hot sun, giving occasion to the emission of noxious and offensive effluvia. The houses on the west side of the slip, where a great part of the victims of the fever resided, are for the most part old wooden buildings in a decayed state, without yards, ill ventilated, and crowded with inhabitants. The offensive condition of the slip and sewer, during the hot days of the latter part of August, was also remarked by many citizens whose business led them to that part of the city. A respectable practitioner informed me, that about this time he was employed in an obstetric case, in the house occupied by Mrs. Kavanaugh, where herself and four others sickened with yellow fever, and that the house was much crowded, almost every room being occupied by a family, very filthy and confined. The room in which he was engaged was so offensive, that he was induced to throw open the window; but the wind blowing in a direction from the slip, he was assailed by such a blast of putrid effluvia, that he was constrained to close the window, and patiently endure the unpleasant smell within.

The best possible proof, that the fever originated from local causes, existing in and about this slip, the sewer, and the foul condition of many of the dwellings of the district, will be found by tracing the disease through its whole

course; for such were the active and efficient measures enforced by the Board of Health, that it was checked almost as soon as discovered to exist, and its entire history is destitute of all those adventitious and unimportant circumstances, which, in the accounts of similar epidemics, have only served to confuse and complicate contested questions. As soon as a malignant fever was known to prevail in the district, the Board directed all vessels to be removed from the slip and adjoining wharves; the inhabitants were persuaded to desert the infected neighbourhood, which was estimated not to exceed thirty acres in extent, and was inclosed by a fence, to prevent useless visits: persons were employed to remove nuisances when practicable, or neutralize their deleterious agency by lime and other antiseptics; the poor were provided for at the public charge at Fort Richmond, on Staten Island; and a temporary hospital was opened at Fort Stevens for such of them as were attacked by the disease. To these measures are to be attributed the very limited number of its victims, as well as our ability to trace them to their origin. Of 63 cases, the aggregate number reported to the Board of Health, 34 were persons residing in the small block of buildings on the west side of the slip, noticed by the Grand Jury, which does not contain more than thirty houses, chiefly of wood, old and decayed; 9 in the block above, on the same side, and the remainder, except the two cases before mentioned, were persons who lived in different parts of the infected district, or whose occupations required them to spend much of their time there. The two exceptions may with much reason be referred to the same cause, as they resorted to a narrow, ill ventilated, and filthy lane, near the Fly Market; and from the strictest examination, it could not be ascertained that they had been for weeks previous within the interdicted limits.

The first case of the fever occurred in the latter part of August, in the building where four others sickened soon

after, situated in the block where the disease raged with the greatest violence. The month of September was the period of its greatest prevalence. Some few occurred on the 1st, 5th, and 6th days of October, and one as late as the 13th; after which the commencement of the cool season, and the appearance of frost, destroyed the cause of alarm, and the citizens, by the advice of the Board of Health, returned to their habitations.

Notwithstanding the clear connexion of cause and consequence, as exhibited in the above occurrences, and the entire view which the limited extent of the disease has enabled every one to take of all the facts in any way connected with it, in order to develop its origin, character, and mode of propagation; some have endeavoured to assign to it a foreign source, and have even in the first instance denied its identity with the yellow fever of former years, rather, it would seem, than admit that domestic causes could produce it.

In order to show on what probabilities the suspicions rest, which look to foreign causes for the source of this endemic, I will briefly notice the history of the vessels suspected, and which, in fact, were resorted to, to account for the appearance of fever in the city.

The French ship *La Florestine* from Martinique, and the brig *Eliza* from Charleston, S. C. have been designated as the vessels to which this imputation most strongly attached. The following extracts from the report of the Board of Health, dated Oct. 25th, 1819, must be deemed unexceptionable testimony; and while they prove that neither of them came to our wharves, they show also the very great difficulty of thoroughly purifying an infected vessel. "The French ship *La Florestine* arrived here in July, after a passage of 20 days from St. Pierres, Martinique. The yellow fever prevailed at that place at the time of her departure, and one of her passengers died with it there. She performed a quarantine of thirty days, underwent all the ordinary purifications, and on the 24th of

August the Health Officer reported that she was free from infection, and might safely be allowed to come to the wharves. The Board, however, ordered her to be anchored in the stream. In the beginning of September two of the seamen were taken ill with yellow fever, and she was sent back to the quarantine ground. From thence she went to sea, but having met with a storm, she put back in distress on the 25th of that month, when it was found that since her departure her captain had died of the same disorder.”

“The brig *Eliza* arrived on the 13th August, after a passage of six days from Charleston, having on board a sick passenger, who died the same day with yellow fever. She performed a quarantine of thirty days, and was three times whitewashed, her limbers were taken out and cleansed, and she was otherwise purified, and on the 16th September she was allowed to anchor in the stream. On the 6th October her captain died of yellow fever, and on the 17th one of her seamen sickened with the same disease.”*

On the failure of other means of introduction from abroad, the Baltimore packets, which usually lay at Old Slip, were alleged to have imported the contagious virus. Dr. Pascalis, in his account of the endemic before referred to, informs us, that on the 28th day of August, there was but one of these vessels lying there, which, when the slip was vacated by order of the Board of Health a week after, took her station at Pier No. 10, North River, where she remained till the middle of September, without leaving any trace of infection. The other Baltimore vessels had probably left that city before any yellow fever prevailed there.

Nearly a month after the subsidence of the fever, an agent of the Board of Health made a statement to that body, tending to show that it had been introduced

* Both these persons died at the quarantine ground. *Ed.*

by a vessel from Baltimore. Besides the very questionable character of a statement made so long after the occurrence, it has, I think, been fully invalidated by the inquiries of Dr. Pascalis, and the information afforded by the Assistant Health Officer;* whose situation enabled him to know more of the circumstances of the accused vessel, than could possibly be gathered from a creditable source by this agent. The statement alluded to, represents the sloop Hiram to have arrived at the quarantine ground from Baltimore, on the 2d of August, (having on the voyage lost a passenger, *supposed* to have died of yellow fever,) with three sick persons on board, who were *taken to the marine hospital*; where, it is further stated, one of them was admitted by some officer of the hospital to be a case of yellow fever. After some few days detention, this vessel was permitted to come up to the city, and take her station in the Old Slip. One of the passengers, Mary Stevens, took lodgings at Mrs. Kavanaugh's, the first victim of the fever, and assisted her, in connexion with Mrs. Brady, another victim, in washing the clothes of the crew, and also some of those of the person who had died at sea. This statement, so far as it differs from the official record of the vessel's history, rests on the parole evidence of the mate, and is proved to be incorrect: First—By the inquiries of Dr. Pascalis, who was informed, by a respectable person living in the same house with Mrs. Kavanaugh, that she never took in washing; that she had no convenience for such business, there being no yard to her house; and moreover, that no person by the name of Mary Stevens, or other person from Baltimore, lodged with her at that time. Secondly—By the statement of Dr. Harrison, who affirms, that the captain *testified upon oath*, “that at the time he left Baltimore, (July 2d,) no yellow fever prevailed there; that the person he lost on the passage, died in convulsions, in consequence, as he supposed, of

* Vide his Letter in Lang's Gazette, Nov. 20, 1819.

intemperance; and that the clothes he wore during his short illness, were thrown overboard." Of the three sick taken to the hospital from this vessel, one died of a bilious remittent fever, and *his* clothes did not go up to the city: a second had a mild remittent, the third an intermittent, and both recovered.

Of the 63 cases of yellow fever reported to the Board of Health, 37 ended fatally; 23 recovered, and the termination of the remaining three is unknown. Twelve of these cases were treated in the hospital at Fort Stevens, where four of them proved fatal. Besides these, there were several suspicious cases sent from different parts of the town, only one of which terminated unfavourably. Four of these were undoubtedly fevers of the same grade and character as those sent from the Old Slip, and I shall speak of them as such. They presented the same course of symptoms, as petechiæ, tenderness of the epigastrium, irritability of the stomach, dysenteric symptoms, with black and fetid alvine discharges, the same appearances of the skin, eyes, &c. Three of them were brought from the same house in Catherine-lane, and two of them had lately arrived from Ireland. This lane is very narrow and uncleanly, chiefly occupied by old wooden buildings, tenanted by the poorest class of Irish, where they reside in filth and misery. It could not be ascertained whence the fourth came. She was brought in a state of stupor and delirium, by two intoxicated men, who said she had been sick three or four days: this patient died on the third day after admission. Of 150 poor removed from the infected district of Old Slip to Fort Richmond on Staten Island, six soon after their arrival there sickened and died, without communicating the fever to any of the others.

Description of the Fever.—Usually the first intimation the person had of indisposition, was the sensation of extreme languor and deadly coldness, followed by slight irregular chills; sometimes this last symptom was entirely

wanting: violent pain of the head, chiefly super-orbital, with a dull haggard appearance of the eyes, sense of oppression and burning heat in the precordial region, rendered still more distressing by frequent retching, and vomiting, quickly succeeded. Sometimes the pain and tenderness extended over the whole abdominal region. The pain of the back, loins, and extremities, was excruciating, and frequently caused the sick to complain most of this symptom, and attribute all their sufferings to a cold and rheumatism. The bowels in the commencement were extremely torpid, and only partially evacuated by the usual doses of drastic purgatives. The pulse in every instance was small and frequent, as in enteritis, except that instead of being hard and corded, as in that disease, it was weak, and easily compressed. The eyes on the second or third day became suffused with blood, so as to make them resemble the common blood-shot eye; as the disease advanced, especially if the symptoms remitted, this blood was more or less absorbed, and left them tinged yellow. The skin was hot and dry, and on the superior parts of the body of a dirty dusky yellow, with some parts of a darker shade. The tongue was coated with a whitish or brown fur, and barely moist. The thirst was moderate, at least the sick did not frequently call for drinks; perhaps this arose from the fear of increasing the vomiting and gastric distress. The urine was small in quantity, and of a deeper yellow than natural. In the worst cases, a more aggravated and malignant train of symptoms appeared from the commencement; but in others they came on about the third, fourth, or fifth day, according to the intensity of the disease, and their supervention may be denominated the second stage. The first indication of their appearance was some disorder of the intellectual functions, at first occurring only at intervals, then becoming more constant, and assuming the character of delirium ferox, which usually terminated in stupor, from which the patient a few hours before death, especially on the appearance of black vomit,

or an analogous discharge from the bowels, usually recovered to a sense of surrounding objects and his own situation. The skin now took a more decided yellow, especially over the upper parts of the body, and became interspersed with numerous petechiæ, bright red in the milder cases, and purple in the more aggravated. If the irritability of the stomach had not been allayed, or recurred in this stage, the matter ejected was usually of a dirty colour, which, as the disease advanced, became of an intenser brown, resembling turbid small beer, or bloody mixed with a slimy fluid; and towards the close of the disease, it was sometimes the true black vomit, in which neither blood nor bile could be distinguished. The bowels, if they had not been freely evacuated in the first days, about the fourth or fifth, showed unequivocal marks of serious derangement. They were now moved by the mildest laxatives, disposed to frequent spontaneous discharges of black, fetid stools, which became mixed, as the disease advanced, with bloody, viscid matter, dejected with tenesmus and griping, till finally, just before death, they were very frequent, copious, and consisted chiefly of grumous blood. The urine continued small in quantity, and of a deep yellow, and was, in some instances, voided with pain, which may have arisen from strangury, caused by the succession of blisters. The oozing of blood from the nose, lips, gums, and tongue, which were now incrustated with a dry black sordes; the indistinct purple patches, or mahogany cast of the skin; the rapid, intermitting, and irregular pulse, with subsultus tendinum; the interrupted and laborious respiration; the diminished heat of the surface, with other symptoms of general collapse, were the usual precursors of death, which took place from the third to the ninth, most commonly on the sixth or eighth day.

The prognosis was favourable when the sick passed the sixth day, without the discharges from the *primæ viæ* showing any serious lesion of those organs, especially if the stools became bilious or natural, which evacuation appear-

ed to be more important and critical than any other. The first favourable indication was shown in the abatement, or diminution of the frontal pain, alleviation of the gastric distress, and the power of retaining food and medicine. A change of the colour of the skin, from the dull dark hue to the bright yellow of an ordinary remittent, was also very favourable, and accompanied by a return of the cuticular functions. The appearance of perspiration I viewed as no otherwise favourable, than as indicating a diminution of the irritability of the system, and a return of the different organs to their accustomed functions; for it was in vain to promote it, if the alvine evacuations did not at the same time become natural, and even freely produced; which appeared to constitute the appropriate solution of the disease.

The danger was to be estimated by the number and intensity of the symptoms which mark the second stage. Black vomit did not invariably attend the fatal cases: it occurred in only two of my patients, and about twelve hours before death. In a third, a bloody glaucous fluid was thrown up just before that event. The dysenteric symptoms were much more constant; and, indeed, in every case, except two of the first sent to the hospital from Old Slip, and which presented the characters of an ordinary remittent, the alvine discharges were dark-coloured, very fetid, often bloody, and mixed with a viscid material resembling tar. Purple petechiæ and oozing of blood from the nose, lips, &c. were also very unfavourable. In one case, which ran its course with the greatest rapidity, terminating on the fourth day, the malignant symptoms, such as raving delirium, weak, intermitting pulse, disordered respiration, great distress and heat in the epigastric region, &c. appeared on the onset of the disease, confounding the stages, or rather only exhibiting the latter. Of the five cases which proved fatal in the hospital at Fort Stevens, two died on the 8th, one on the 4th, one on the 5th, and one on the 6th or 7th days. The convalescence

of the aggravated cases was remarkably tedious ; there appearing to be a serious lesion of some important organ, from which the patients recovered with difficulty. One of the cases terminated in fatuity, attended with extreme dilatation of the pupils, a pulse which was thought to exceed 200, and a taciturn stupid state, resembling those cases induced by epilepsy. Two months after, the last time I saw the subject of this case, she continued in the same condition.

Treatment.—In two of the first cases, I made trial of the sub-muriate of mercury, with the view to excite ptyalism. In one of them, which was one of the mildest I treated, the gums became affected in 24 hours, and the patient soon after recovered. In the other, although there was ample opportunity for administering the medicine, as it was commenced early in the disease, and regularly continued in small and frequently repeated doses for five days before the appearance of the fatal symptoms, it produced no apparent effect. The alarming debility and the exhausted state of the vital powers, forbade the employment of the lancet. The signs of organic lesion of the stomach and bowels, as shown by the evacuations after the disease had continued four or five days, led me to make trial (for the removal of the irritation which existed in these organs, and to restore their suppressed excretory functions) of the liberal and daily employment of purgatives, conjoined with remedies that should, by their stimulant, sudorific, and nutritive properties, obviate the alarming debility, and support the vis vitæ. The almost uniform success which attended this plan of treatment, where the discharges had not shown serious morbid alterations, exceeded my expectations, and incline me to think that a constant attention from the commencement, to obtain free and repeated alvine evacuations, is the most efficient method of treating this disease.

The greater part of the sick had the bowels opened before their entry into the hospital, and on repeating the purgative, I did not find the torpor and inaction of this organ so great as other practitioners represented to have place in the commencement of the disease; for the usual dose of *Ol. Ricini* in general answered very well, and was repeated till the evacuations were free and copious. Afterwards the following laxative mixture was given daily to the extent of producing two or three alvine discharges;

R. Pulv. Rhei,

Carb. Potass. á á 3ss.

Ol. Anis. gutt. V.

Aq. Fontan. Oj. M.

Dos. \mathfrak{z} ij. quâque horâ pro re nata sumend.

In the interval of using the laxative, the patient took of the carbonate of soda gr. v. repeated every three hours, or the carbonate of ammonia to the same extent was substituted where the powers of the system were languid and sinking. At the same time the free use of warm wine was given, with the infusion of serpentaria, or eupatorium, as best agreed with the sick, was administered to keep up the tone of the system, and determine to the surface. The diet consisted of arrow-root with wine, or some other light nutritious preparation preferred by the patients. The irritability of the stomach, especially after the fever had existed a day or two, was best allayed by the use of Huxham's tincture of bark; which was also freely given on the accession of malignant symptoms, or alarming prostration of strength. The early and repeated application of blisters over the epigastric region, seemed to be of service in relieving the gastric heat and oppression, and applied to the extremities in the more advanced stage of the disease, were of signal service in maintaining the excitement.

The arrangements of the temporary hospital did not admit of autopsic examinations.

MEDICAL MUSEUM.

VOL. I.....No. III.

DR. DRYSDALE'S *History of the Yellow Fever at Baltimore, continued from page 149.*

LETTER VII.

MY last contained remarks upon purging in the yellow fever; we will now proceed to another important remedy,

Blood-letting.

He who has imbibed from authors ideas of putrefaction, will hear with amazement—blood-letting recommended in a disease which he has believed to be of a putrid nature. But the more attentive observer of nature, whose guide is reason, and whose object is truth, will be astonished only at the influence, which a false and destructive hypothesis has so long undeservedly occupied in the schools of medicine.

Could hemorrhages have given rise to the opinion of putrefaction in fevers? The hemorrhages from the nose and from the lungs, in the different periods of life, prove that this cannot be the case.

Does the appearance of *petechiæ* prove putrefaction in the blood? Did their occurrence even in typhus fever itself, depend on this cause, why should not our conclusions be established by the hasty putrefaction of the bodies after death? But *Hamilton, Lind, jun.* and *Moore*, have remarked, that this circumstance proceeds more slowly in such bodies than in others. That *petechiæ* originate also from excessive violence of action of the blood-vessels, might be proved by innumerable facts. I know that they attended a violently inflammatory hepatitis, and were removed by venæsection. *Sydenham** abounds with facts of a similar nature. *Pringle*† relates a curious instance of their appearance below the ligature placed on an arm during venæsection. “*Petechial or purple spots,*” says *Moseley*, “seldom accompany the remitting fever in the West Indies, unless the circulation has been forced with cordials or hot regimen.”‡ *Bartholine* in his description of the fever of 1652, observes, that *petechiæ* appeared in the exacerbations, and disappeared in the remissions. This circumstance occurred in several cases of the yellow fever.

Can the *yellowness of the skin* be attributed to a putrefactive dissolution of the blood? It is now too well known to depend upon suffusion of bile, to be ascribed any longer to such a cause: nor does the superabundance of bile prove the putrefaction of the blood, though long supposed to be the offspring of putrefaction, and to tend more rapidly to that condition, than any other fluid of the body. It has lately been proved that the opinion is without foundation. The blood flowing through the *venæ portarum* putrefies more slowly than that which has just circulated through the lungs; and the bile secreted from it, is much later in entering that process than the blood of the same animal. This has been clearly demonstrated by an experiment related in the inaugural thesis of your late pupil, *Dr. J. R. Cox*.§

* See pages 88, 400, 403, 548, and 553, of Swan's edition.

† Page 304, 8vo. edition.

‡ Page 94.

§ Inaugural Essay on Inflammation, page 31.

Yellowness of the skin occurs also very frequently in a common ague; and who will term this, or jaundice, a putrid disease? Let me ask also, how any person can recover health, after this colour had appeared over their bodies, if it depended upon a putrefactive dissolution of the blood?

But what testimony of putrefaction in a living body can be deduced from the speedy putrefaction of dead bodies?----Animals killed after a chase are disposed to speedy putrefaction. "The bodies of men, who die of violent passions, or after strong convulsions, or even after great muscular exertion, putrefy in a few hours after death." The violent emotions which precede death in these cases, must have induced such great disorganization throughout the body, as to have destroyed, as it were, its texture, and thereby have disposed the more to its early dissolution. That the circumstance depends rather on the excessive derangement produced, than on the actually putrefactive nature of the disease, derives additional support from the following facts: Fishermen, says *Wilson* and other authors, produce sudden extinction of life in fish by crushing their brains: they are by these means preserved from putrefaction longer than those which die gradually after convulsive emotions. The bodies noticed by *Perriar* from *Dr. Hamilton*---those by *Lind, jun.* and *Moore*, ought to have putrefied rapidly, upon account of the diseases of which they died, had this process already commenced previously to the loss of life. The conclusions drawn from these circumstances in favour of the inflammatory disposition of the yellow fever, are strengthened by your observation, that those bodies putrefied most rapidly during the prevalence of the disease in your city, whose violent commotions had not been opposed by evacuations. I had not an opportunity of attending to this circumstance in Baltimore; the bodies were hurried away to their graves almost immediately after death. Are we not informed that bodies dead of nervous diseases, such as tetanus and hydrophobia, quickly rush into putrefaction?

But passing by these points of useless controversy, let us review some of those symptoms of the disease itself, and the

opinions of men conversant with it, by which we are authorised to call in the aid of venæsection. A pulse uniformly tense; the great advantage resulting from the appearance of the catamenia; the congestion of the brain indicated by the suffused face and red eye, would lead us to the use of that remedy: and why should we hesitate to have recourse to it, when we are assisted by the experience of so many celebrated physicians?

I shall now consider the effects of blood-letting in the yellow fever.

1. When the pulse was very frequent, venæsection rendered it more slow; when very slow, it gave it frequency; and when depressed and small, it gave it fulness. This latter circumstance is often remarked by Sir John Pringle, in the remitting fever,* and by Donald Monro, in dysentery.

2. Venæsection removed the delirium and the comatose state, with which the sick were tortured or oppressed: it likewise removed wakefulness; and very frequently acted like an anodyne—being succeeded by two or three hours of refreshing sleep.

3. It promoted the operation of the calomel in opening the bowels. Hence I have frequently heard the patient call for the close-stool, while the blood was flowing from his arm, although the bowels had previously appeared obstinately costive †

4. It checked the violent vomiting in the first stage of the disease, which had resisted every other remedy: and when a hiccup accompanied its first attack, it yielded to the same remedy.

5. It was frequently succeeded by a general perspiration, and sometimes by a profuse sweat.‡

6. It removed the sense of oppressive weakness, and inspired the patient with new strength and vigor.§

7. I have seen in a great number of instances the dilated pupil contract, while the blood was flowing from the vein.

* Pages 181, 185, 186, &c.

† See Cleghorn, page 197.

‡ See Cleghorn, page 200: and Sydenham, page 92.

§ See Sydenham, page 98.

Sometimes the first bleeding caused it to contract to a certain limit; but succeeding venæsections reduced it to its natural dimensions. After one bleeding the pupil has again dilated itself; but after a second it again returned to its proper state.

8. Blood-letting mitigated and removed the pains, that tortured the patient even to madness. While the blood was flowing from the arm, I have observed the pain totally vanish from the head---and that in the back lose its intolerable poignancy. I believe I have formerly mentioned, that a mitigation of pain in one part sometimes alternated with its exacerbation in another. A respite from torture would follow venæsection for an uncertain period of time; but it frequently returned, and again demanded a repetition of the remedy.

9. But the pains did not always vanish after blood-letting; they were frequently *increased* after one or two detractions of blood. Where pain had been felt only in the head, one bleeding has caused it to rage also in the back and limbs. This occurrence was not new to me: I had formerly bled an old negro man, who complained of some fever, and considerable pain in his breast: He lost one pound of blood, but in the succeeding hour, the pain had so much increased, and had become so intolerably acute, that I was obliged to permit the blood to flow, until it induced an amendment of his state: This was effected by the additional loss of twenty ounces, by which his cure was completed. Whenever this circumstance may occur in the yellow fever, the increase of pain ought not to deter us from a repetition of blood-letting: a second or a third bleeding may be requisite to subdue the violent motions, to which the vessels had been restored by the first.

10. The same principle will explain also another circumstance not unfrequently occurring in this disease; all the other symptoms of fever would be present, except a *hot skin*. The loss of blood would relieve the oppression of the vessels, and, by restoring them to a morbid degree of action, produce the burning skin. Sydenham in his account of a new fever, 1685, remarks the fact: "All the symptoms of weakness

proceed from nature's being in a manner oppressed and overcome by the first attack of the disease, so as not to be able to raise regular symptoms adequate to the violence of the fever. I remember to have met with a remarkable instance of this, several years ago, in a young man, I then attended; for though he seemed in a manner expiring, yet the outward parts felt so *cool*, that I could not persuade the attendants he had a fever, which could not disengage and shew itself clearly, because the vessels were so full as to obstruct the motion of the blood. However, I said, they would soon find the fever rise high enough from bleeding him. Accordingly, after taking away a large quantity of blood, as violent a fever appeared, as I ever met with, and did not go off, until bleeding had been used three or four times.”*

11. In the camp remitting fever, says *Pringle*, the remissions usually appear from the beginning, and especially if the patient is blooded in the first attack.---In the yellow fever, bleeding, if used quickly after its attack, brought it to a close on the first or second day in a variety of instances. In some, the disease disappeared almost immediately after the salutary aid of venæsection. Some cases of considerable violence terminated favourably, although this remedy had been deferred until the third day; but later than this period, it seldom proved serviceable. The system had already suffered irrecoverably from the unopposed convulsive action of the vessels.

12. In all those cases, which terminated fatally, notwithstanding the use of blood-letting and purging, these remedies preserved a continued serenity and soundness of mind, until the stream of life had ebbed forever. They smoothed the passage to the grave, and made the transition from life to death, resemble the gentle and gradual approach of sleep.

13. The convalescence was generally rapid after the free use of calomel and the lancet. Cleghorn in his account of the pleurisy, &c.† says that---“it was no less remarkable to ob-

* Wallis's edition, vol. 2, page 351.

† Page 282.

ferve, how quickly the sick recovered their usual health and strength, notwithstanding the great loss of blood they had sustained; while many, who had been bled more sparingly, continued in a languid infirm state for months, without being able to get rid of the cough and pain in the breast."

From the preceding circumstances, we may decide with certainty in favour of venæsection in the yellow fever; and so long as facts are to be preferred to unfounded assertions and baseless hypotheses, blood-letting will maintain its power over the present disease. Climate may diversify its symptoms, and season may vary its form; but the rational physician will always discover the influence of climate and season, and from symptoms alone determine the greater or less necessity for the lancet.

We may now inquire into the causes, which regulated the use of venæsection.

1. This operation must be performed as soon as the symptoms of the disease called for its aid. If it were deferred until a purge had acted, several hours were unavoidably lost; and too frequently the lapse of a few hours was followed by the loss of life. We have observed, that the operation of a purge was accelerated by the loss of blood, and that the two remedies co-operating together, excited a general sweat. No time, therefore, should be lost in opposing to the destructive exertions of the fever, the salutiferous effects of venæsection.

2. "Si vehemens febris urget," says a father of medicine, "in ipso impetu ejus sanguinem mittere, hominem jugulare est. Expectanda ergo intermissio," &c. But *Pringle** has taught us to act differently and with advantage. In the exacerbation of the yellow fever, I found bleeding not only admissible, but accompanied also with the most eminent good. It brought it sooner to a close, and very frequently retarded the approach, or moderated the vehemence of the succeeding paroxysm.

3. If the pains persevered with unabating severity, and if the pulse preserved its tension in the remissions of the fever,

* Page 207.

bleeding was still forcibly required. It very frequently converted a remission into a complete intermission, followed by the return of health; or moderated the violence and duration of the ensuing exacerbation.

4. If the fever appeared in the form of an intermitting tertian, and allowed the patients to pursue their wonted occupations on the intermediate days, blood-letting could not be omitted, whenever the tense pulse indicated the necessity of its aid. Even during the intermissions of the fever, I was led by the continuance of tension in the pulse, to call in the assistance of venæsection, with the most obvious advantage. The knowledge of some cases, which had commenced their career in the insidious disguise of a tertian, but soon discovered themselves by a fatal termination, encouraged me to the practice I pursued: for surely too much prudence could not be summoned to anticipate and prevent such an unfortunate event!

5. In some instances, as I have observed in a former letter, the patients were not confined to their beds---but extremely oppressed with undescribably anxious feelings, &c. walked through their rooms. Bleeding was in these, as requisite to obviate death, as in many other cases apparently more severe.

6. *Donald Monro* has informed us of the oppressed pulse in dysentery---*Cleghorn* and *O'Connel*, in pleurisy---*Sydenham* in peripneumony---*Moseley* in the yellow fever, and *Pringle* in various diseases;---and from them all we derive the most pleasing assurances of the utility of blood-letting. Emboldened by these great examples, and still further encouraged by yourself, why should I hesitate to use the lancet in this oppressed condition of the pulse? * The loss of blood removed this dangerous oppression, and permitted the pulse to regain a frequency commensurate with the more obvious symptoms of the disease. And even when the pulse was so oppressed as to have become almost imperceptible, while violent pains marked the severity

* The following case extracted from Dr. Jackson's "Remarks on the constitution of the medical department of the British army," &c, exemplifies strongly

of the disease, venæsection was performed with the utmost advantage---and was followed by a remarkable rising of the pulse.

7. From the appearances, which the blood exhibited, and which I have described to you in a preceding letter, no certain directions for regulating venæsection could be drawn. In the early stage of the disease, and in those cases in which nature

the utility of copious blood-letting in the depressed state of the system, and will doubtless have great weight with every practitioner.—*Editor.*

“Robert Thomson, head surgery-man, was attacked on the 29th of December with symptoms of fever of uncommon alarm:—the head-ach was intolerable, with an oppressive sensation in the body as if the chest were squeezed in a press; the countenance was dark and agitated; the hands and all the members tremulous and unsteady, as in St. Vitus’s dance; the heat deep and concentrated; the pulse small and labouring;—the expression of distress great. He was seen by the physician into whose hands he was likely to pass in a day or two. That gentleman did not prescribe, for he had not yet entered upon duty; but he noticed the danger of the case. When the business of the ward was finished, Thomson was again examined, for his case required more than common attention. The physician alluded to was not present; but the assistant-surgeon attended, and bound up the arm, in order that some blood might be taken away; for though the symptoms were not such as are ordinarily thought to indicate bleeding, yet bleeding appeared to be a preliminary remedy, and the only one which was capable of averting organic destruction. The operation was therefore determined upon. One pound of blood produced no material change; two only little relief: but an indication arose in the course of the process, giving reason to believe that the purpose would be attained by perseverance. The blood was therefore permitted to flow;—three pounds removed the head-ach and the pressure from the chest; the labouring tumult of circulation, as communicated by the pulse, disappeared: eight ounces more, in all fifty-six, released him, as he expressed it, from chains and horrors. The countenance brightened up,—he neither became faint nor pale. The extremities,—the legs and thighs, were wrapt in flannel wrung out of hot water; the chest was covered with a very large blister: emetic tartar, with opium, was given, in a manner, and with a management, intended to direct the effect of the remedy in operation principally towards the skin: tea or huillon was given for drink, and ordered to be drunk very hot. In three or four hours, there were signs that the danger of the disease was past; and in four days he returned to his duty. He got neither wine nor strong drink.”

seemed too much oppressed to excite the regular phenomena of fever, the blood sometimes appeared considerably dissolved; but in succeeding bleedings it had acquired a firm consistency. When the disease had advanced, unopposed by the lancet, so far as to have induced the appearance of the blood, noticed in No. 5.* it was in vain to attempt rescuing the patient from the grave. I saw no instance of a recovery after this state of the blood had been produced.

8. The suffusion of large red blotches over the body accompanied a most inflammatory case. Too much time had been irrecoverably lost, when bleeding might have been profitably employed, in reducing the violent commotions of the system. That appearance resembling mosquito bites, was most obviously influenced by venæsection; but might we not have expected this, after observing its great dependance on the exacerbation of the fever?

9. The quantity of blood requisite to be drawn, varied with the weather and the degrees of indirect debility. "*Ne pondus hic quidquam aut mensura determinat, sed morbi levamen.*"†

As the weather became cool, and the degrees of indirect debility became less great, and less rapidly progressive, a large quantity of blood was drawn safely at a time. It might be permitted to flow, until the pulse began to lose its fulness and tension, or until the pains began to moderate. It sometimes required twenty ounces to produce these effects; but if these failed, it was prudent to delay the detraction of more until a few hours had elapsed. In some cases it was not only safe but proper, to draw sixteen or twenty ounces of blood, every six or seven hours, or more frequently, till the violent symptoms had abated. It might be then repeated, and proportioned according to the occasional return of the pain in the head, or of the other symptoms of the fever. Sixty ounces were drawn in twenty hours, in a violent case, with the most desirable

* Of the appearances of the blood in a former letter, page 138.

† De Haen.

event. I may remark in this place, that as the weather became more cool, the disease yielded more slowly to the remedies, than it had done during the prevalence of great heat. The greater violence of the fever at the latter period, required more expedition in the administration of remedies, but yielded to their influence with more facility. The uninterrupted heat of summer had relaxed the blood-vessels, and as they obeyed more speedily the action of stimulating powers, so they yielded more readily to the means of opposing them. But when they had acquired firmness and density from cold, they necessarily required more powerful causes to subdue them, and therefore longer resisted their exertions.

Though the effects of cold called for plentiful bleedings, yet the continuance of heat allowed only small evacuations of blood in the first hours of the disease. High degrees of indirect debility, require a gradual abstraction of its causes, for in proportion to its excess, stimuli should be more slowly withdrawn.

Thus, in the plague, while bleeding, according to *Hodge*, did harm, yet—"a hundred times the quantity of fluids was discharged in pus from buboes, without inconvenience." He observes also, that bleeding, as a preventive of the plague, was only safe and useful, when the blood was drawn by a small orifice, and a small quantity taken at different times.

The pestilential fever of Montpelier, in 1623, was successfully opposed by *Riverius*: he drew at first two or three ounces of blood, and after a few hours he again drew twice that quantity, and by these means he saved the lives of the sick, while other methods failed to subdue the disease.

The beneficial consequences of sweating in the plague, as recorded by *Sydenham*, cannot be ascribed solely to the quantity of fluid evacuated, but also to the gradual manner in which it was subtracted.—*Pareus* mentions the case of a patient, who was saved in the plague by a hemorrhage from the nose, which continued two days,—although he had condemned just before the admission of blood-letting. *Dr. Williams* relates

recoveries from the yellow fever by hemorrhages from the nose, after “ a vomiting of black matter and a hiccup had taken place.” I saw a similar instance; but might not the hemorrhage have been an effect rather than a cause of recovery? Might not the heart and larger arteries have acquired so much healthy vigor, as to have ruptured the smaller weak vessels of the nose?

The good effects produced by the occurrence of the catamenia, and by the accidental flow of blood from orifices in the arm in several cases, I am willing to ascribe in a great measure, to the gradual manner in which the fluid was evacuated. No sudden collapse of the vessels ensued, to give a shock to the whole system.—The profuse sweats, which sometimes occurred on the first day of the fever, although they were not accompanied with sensible relief, yet, I am of opinion, moderated the violence of the disease. The quantity of fluid discharged, must not only have diminished the oppression of the vessels, but the moderate manner in which it passed away, must also have been productive of advantage.

From the preceding circumstances, it must appear, how extremely requisite it is, to consult the states of the weather and of indirect debility, in determining the quantity of blood proper to be drawn. Bad effects can only follow, from the quantity of stimulus abstracted being disproportioned to the degrees of indirect debility.

Fainting, or a tendency to faint, so usual in common inflammatory diseases, after venæsection, almost never occurred in the yellow fever. I saw but one instance—and this took place after the loss of two or three ounces of blood, in an advanced stage of the disease. Weak women lost fifteen or twenty ounces, and delicate girls of nine years of age, lost twelve or more ounces, without being affected with any inconvenient consequence. I generally pursued *Van Swieten's* advice, of keeping the patient in a supine posture during the performance of venæsection; but even in an erect position, fainting did not occur. Many persons lost much blood without incon-

venience, who informed me, that they had never been bled before in any situation without fainting. In common cases in which venæsection is performed, a degree of collapse immediately follows the abstraction of the blood and induces fainting: but in the yellow fever, the loss of blood, by removing oppression from the vessels, generally restored them to a facility of action, which they did not before possess. To the absence, therefore, of that collapse, or suspension of action, succeeding to the depletion of the vessels in common inflammatory cases, we must ascribe the non-occurrence of fainting in the yellow fever.....ADIEU!

LETTER VIII.

IN my last letter, Sir, which I had the honour of addressing to you, I considered the subject of blood-letting. Its excellent effects in the yellow fever were then related, and the principles, upon which it was admitted and regulated, cursorily mentioned. I will now notice some objections, which were made against this remedy; the weakness of some of them might excite our ridicule, did we not feel too much pity and vexation, that they should originate from men, who presumed to call themselves physicians.

It was objected to blood-letting, that,

1. It was improper and inadmissible in diseases of autumn.—
This objection is too frivolous to be refuted.

2. That one or two bleedings might be admitted, but if repeated more frequently, injurious or fatal consequences must ensue.

While directed by symptoms only, we can never bleed too frequently in any disease; and I will venture to assert, that no very violent case of the yellow fever was cured by one or two

bleedings. How many persons have been lost, not only from the total want of venæsection, but also from its too moderate use! It had been better to have rejected the lancet entirely from our hands, than to have employed it in so frugal a manner. The ninth section on the effects of blood-letting, points out the increase of violent symptoms, occasionally following the first or second operation: but a rational view of the cause brought down the disease so as to be cured.

It argues a very imperfect knowledge of the nature of the yellow fever, to ascribe the fatal termination of a very severe case, to two or three blood-lettings, which had been used in its course. Perhaps, if no blood had been drawn, the case would not have terminated with more certain fatality; but, from experience I will hazard the assertion, that if twice this number of bleedings had been performed early and judiciously, the patient's chance of recovery would have been more than proportionally increased. *Sydenham* speaks of similar ill effects of too-sparing venæsection in the plague; and has given the words of *Botallus* also upon the same subject:—"But if our fears be so great, and we take away so small a quantity of blood, how is it possible to judge exactly, what good or mischief, bleeding may do in the plague? For if a disease (which requires four pounds of blood to be taken away in order to its cure, and yet but one is taken away) destroys the patient, it does not therefore prove destructive, because bleeding was used, but because it was performed in an improper, and perhaps in an unseasonable manner: but ill-designing or indolent men, always endeavour to lay the fault on that, not because it did really do mischief, but because they vilely desire to give every body an ill opinion of it: Or supposing they do not do it out of wickedness, they cannot be excused from ignorance and perverseness, both which are doubtless pernicious, but the former much more so."

A circumstance very applicable to our present subject occurs to me, as related by that learned and elegant physician, *Cleg-horn*, on the pleurisy, which prevailed in Minorca, in 1745-46.

Without discussing, at this time, the propriety of its name, we may only observe that it bore no small resemblance to the yellow fever: as an inflammatory disease, it obviously required the aid of venæsection. But although this remedy was two or three times repeated in a variety of instances, yet almost every case terminated in a fatal manner. * “The cessation of symptoms, which generally happened about the third day, made me imagine the danger was over; so that before the patients were blooded above twice or three times, the exacerbation came on upon the fourth or fifth days, and defeated all attempts by bleeding, blistering, or otherwise to relieve them.”

“These unforeseen events,” he continues, “startled me greatly, and led me again to review the whole progress of the disease, its symptoms, and issue.” From the observations of some authors, who exclaimed vehemently against reposing great confidence in the remedy of blood-letting, *Cleghorn* was induced to use the lancet with more caution, and to rely principally on other means of cure. “But this management proved less successful than the former; and I was convinced in a short time, that instead of too much, too little blood had been taken away in the beginning.”

“I then began to bleed more plentifully, and repeated it so as to take away thirty or forty ounces within the three first days of the distemper; and endeavoured by bathing the legs and blistering of them on the third day, to prevent the fatal symptoms from coming on about the fourth or fifth; giving nitre at the same time liberally, and camphire in small doses, to promote the thinner secretions. This method succeeded well in several cases; expectoration and urine being thereby increased: but if they were not increased, the commotions, which arose on the fourth, fifth or sixth day, made it always necessary to have recourse to bleeding again, and more blisters, in order to relieve the oppression of the head and breast; and though for the most part the patients did escape, yet they re-

* *Cleghorn*, page 256, &c.

covered with difficulty, and continued coughing, spitting and sweating in the nights, for several weeks."

"At last, about the middle of March, when the disease raged with the utmost fury, having found there was an absolute necessity for bleeding largely without delay in order to preserve life, I began to put in practice the following method of cure, which seldom or never failed, not only in young robust people, but even in those of a more advanced age, provided I saw the sick before the end of the third day."

"If I was called, for example, in the morning, the patient was immediately laid in a horizontal position, and bled at the arm, until his pains *abated*, or he *began to faint*; neither of which commonly happened, before sixteen, twenty or twenty-four ounces were taken away. If the symptoms continued, I ordered about the same quantity to be taken from the other arm in the afternoon, without regarding the urine, expectoration, or appearance of the blood. Next morning, though there might be a great alteration for the better, yet if there was the least room to suspect that any obstruction remained in the head or breast, the bleeding was repeated: and by carefully weighing the blood, I found, that between forty-eight and fifty-four ounces were frequently taken away during the first four-and-twenty hours of my attendance. This sudden copious evacuation, commonly procured a cessation of all violent symptoms, and afforded an opportunity to give an antiphlogistic purge the next day. But if the symptoms did not cease; or if the pains and difficulty of breathing returned the day after the purge had been given; or if there was reason to suspect from the head-ach, giddiness, tingling of the ears, and disturbed rest, that the brain was in danger of being affected, I had again immediate recourse to bleeding, taking away at different times to the amount of twelve, eighteen, or twenty-four ounces, in the space of a day, either by the lancet or cupping glasses, or both, as occasion required; by which means the impending storm was happily averted; and as soon as the commotions were quelled, the purgative was repeated every other day for

- d.* The part of the bone, where, from the immediate vicinity of the irritation of the disease, the external surface has been not only disturbed, but entirely removed.
- e.* The part immediately beyond, where the diminished effect of irritation, instead of inducing absorption, has been the means of exciting a new ossific secretion upon the natural surface of the bone.

Fig. 2. Exhibits on a reduced scale the appearance of a tumor of the same description with the above. The minute structure of the disease is similar to that of the former preparation, but the general character of the disease was all that it appeared essential to represent.

- a.* The healthy part of the cylinder of the femur.
- b.* The condyles of the femur.
- c.* The ossific tumor.

AN INQUIRY
INTO THE ORIGIN AND NATURE
OF THE
YELLOW FEVER,
AS IT HAS LATELY APPEARED IN THE WEST INDIES,
WITH
OFFICIAL DOCUMENTS
RELATING TO
THIS SUBJECT.

By WILLIAM FERGUSSON, M.D.

INSPECTOR OF HOSPITALS, AND PRINCIPAL MEDICAL OFFICER IN THE
LEEWARD AND WINDWARD ISLANDS.

Read March 18, 1817.

AS an introduction to the subject, which I propose to discuss in the present communication, I shall beg leave to premise the following queries, which were put by the Army Medical Board, in consequence of the great sickness and considerable mortality that prevailed on board some ships, conveying black recruits from Goree to the West Indies.

Barbadoes, October, 1816.

Queries relative to the Regalia Transport, which sailed with black recruits from the coast of Africa, for the West Indies, in 1815.

1. *Was the ship good and her crew healthy before the blacks were embarked?*

1. The ship was good and her crew healthy, until she took on board a large quantity of green wood, a very short time before the blacks were embarked.

2. *What was the state of the black recruits? Who inspected them previously to embarkation? and from whence did they come?*

2. Many were embarked sick from hospital, with ulcers, fluxes, &c. It is supposed they were inspected by the surgeon who had been appointed to accompany them, but did not, on account of sickness. No account can be obtained of the tribes or nations to which they belonged, previous to their capture at sea, or their being brought to Sierra Leone.

3. *Do you conceive that any thing in the ship, or in the state of her cargo, could have produced a very destructive fever on her passage to the West Indies?*

4. *Inform me as far as you can yourself learn, of the treatment of the black recruits, before and after their embarkation, their diet, exercise, &c.*

3. A quantity of green wood, recently laid in on the coast of Africa, and foul ballasting that had not been changed for years, I conceive perfectly adequate to the production of the most destructive fever, under various modifications of leakage in any ship navigating the tropical seas.

4. They had no surgeon to attend them in any of their own transports, and could not possibly be properly attended by the surgeon of the convoy ship, however ardently active might have been his disposition so to do, nor was it possible to furnish the transports with medicines and dressings as they might be wanted from that ship, supposing her to be furnished

with supplies for such a service, which she could not possibly be at Sierra Leone, where the want of medical stores was assigned as a reason for sending sick from the hospitals to the ships. Their diet was not suitable either in the provision laid in, or distribution afterwards, as was proved to the Military Board that sat at Barbadoes, to inquire into the causes of the sickness and mortality on the passage.

5. *The description of these recruits, whether young or old, and their previous habits and occupations, in as far as you can learn them?*

5. They were mostly very young. Their description that of uncivilized Africans. Some of them of a very barbarous description.

6. *Inform me of the number sick on arrival at Barbadoes, and describe particularly the disease under which they labour-*

6. 114 sick labouring principally under dysentery, ulcers, and dropsy, or cachectic leucophlegmasia. The treatment

ed, with the different modes of treatment which were pursued ?

of the first was conducted by mercurials, ipecacuanha, lime juice, and the mucilages; of the second by stimulating antiseptic dressings, combined with a generous antiscorbutic diet ; and the third by deobstruents, tonics, stimulants, diuretics, &c.

7. I request to know the total number sick on the passage, with the number of deaths, and the number sent sick on shore ?

7. The convoy ship did not come into Barbadoes, therefore no communication could be held with the surgeon to ascertain the number of sick on the passage. The number of deaths was 52 ; the number sent sick on shore to hospitals 114.

8. I request to know the strength of the detachment when embarked at Sierra Leone ; the strength when landed at Barbadoes, and the number sick on arrival at Barbadoes ?

8. The number embarked was 793 ; the number landed 741.

9. *I beg to be informed of the result in the number landed at Barbadoes, and the present state of the detachment?*
(Signed)

“ J. M'GRIGOR,
Director-General.”

9. The number that perished in hospital in the course of 2 months, from 24th of August to 24th of October, was 70, viz. 53 of fluxes, 5 of dropsy, 9 of pulmonic complaints, 1 of ulcer, and 2 of fever.

The number treated 288. There was no case of elephantiasis or unmixed scurvy seen amongst the recruits landed at Barbadoes.

(Signed)

W. FERGUSON,
Inspector of Hospitals.

In replying to the foregoing queries I have confined myself entirely to the points which I was directed to answer; but as the circumstances of health under which the crew and the inmates of the *Regalia Transport* arrived at Barbadoes, present an interesting field of investigation in regard to the infectious nature of tropical fever and dysentery, I have considered it my duty to throw every light in my power on this long disputed and yet undecided question.

From the documents that will be produced as an Appendix at the conclusion of this paper, it will be seen that the *Regalia Transport* arrived at Barbadoes in the month of August 1815, with the yellow fever on board from the coast of Guinea, its supposed original source: that the ship on her arrival at Barbadoes was not put under any restraint or quarantine *, but communicated freely with the sea-ports of Barbadoes, the Saints, Antigua, and Guadaloupe; landing the severally ill or dying subjects of that disease amongst the inhabitants and at the hospitals at Barbadoes and Antigua, without communicating any infection at any of these places †; and finally, after having undergone a thorough purification, sailing from Guadaloupe for Europe, crowded to a very great degree with rebel French prisoners and their families from the jails under the most dangerous circumstances to health, with a case of yellow fever actually dying on board ‡ the day before she left Basseterre Roads ||, but without communicating any such fevers to the unfortunate passengers, leaving any behind her at Guadaloupe, or importing any at the ports she ultimately reached.

* This happened through oversight of the Inspecting Medical Officer, while the army was absent at Guadaloupe.

† Vide Appendices Nos. 1, 2, and 3. ‡ Vide Appendix No. 4.

|| I was absent from Basseterre at the time the *Regalia* arrived, and did not return till after she had sailed.—She was there only two days.

The first yellow fevers that were heard of there occurred at least five months afterwards, amongst some civilian strangers newly arrived from Old France, and these, while the British retained possession of the island, never extended to the seasoned inhabitants and troops in garrison, with the exception of some white officers of the black corps, that garrisoned Point au Pitre, who, on the very evacuation of that place, not so much as three months ago, were seized with yellow fever and died of it in Saint Vincent.

In like manner it will be seen from the queries prefixed, and the sick returns of that period, that a most putrid and malignant dysentery was introduced into, and filled our hospitals at Barbadoes, from the negroes that the *Regalia* imported; but that the disease did not in a single instance infect any medical attendant or servant employed about the sick.

As the question will next naturally arise, how such a fever as that which destroyed so many of the crew of the *Regalia*, and attacked almost every one that came on board of her to supply the place of those that had perished, could spread so unerringly and prove so destructive without being infectious, I shall enter into it more at length.

The quantity of green wood laid in at Sierra Leone on board the *Regalia* for fuel, must have

been very considerable ; for after she had been several weeks in the West Indies, there were still as many tons of it left as in the master's opinion would serve for a voyage to Europe. The ballast too had never been changed or sifted from the time she left England, nor for any discoverable time before. It was what is called single ballast, small stones with a considerable mixture of mud and other impurities ; and when I examined it on board the Regalia, it had been much fouled by leakage from the water casks. The ship in respect to leakage was far from being a dry ship *, and from that circumstance might, with better ballast (of iron or large stones), have proved a very healthy one ; but the absorption of sea water amongst foul ballast and green wood, could scarcely fail to prove unwholesome. In other respects the Regalia, in all her apartments of cabin, steerage, and betwixt decks, was uncommonly lofty and well aired, and so far from being crowded, she had about double the tonnage for the complement of negroes she brought over that is commonly allowed for troops. She was excellently found in every species of provisions and stores, and her discipline and cleanliness were unobjectionable. In short, there was nothing in her nor about her that could either generate or permit the retention, if introduced, of the matter of typhous fever. The cause

* She had 32 inches of water in the well at the time I sounded it, and, according to the master's calculation, she made three quarters of an inch every hour.

of disease was therefore, I am clearly of opinion, to be ascribed to the green wood laid in at Sierra Leone, operating along with the foul ballast to furnish, when impregnated with the gases arising from putrid sea water, morbidic miasmata, similar to those that on land arise from marshes when exposed to the influence of the higher degrees of atmospheric heat. Why this morbidic power operated differently on the blacks and the whites, may be explained from the fact that the African is very rarely amenable to those influences that affect white men with intermittent, remittent or yellow fevers. If they operated at all therefore on them, they must have produced some other disease; but I see no reason to attribute the dysentery of the blacks from which so many perished*, to other causes than those that have been proved to exist, *viz*: the sending numbers from the hospitals of Sierra Leone to the ships ill with that disease, the want of proper remedies and medical attendance during the voyage, and the highly improper and dangerous change of diet, from one wholly vegetable to the ordinary ship's rations, which on board the *Regalia* particularly, were served to those poor creatures during the voyage†. They were

* One hundred and eleven fluxes were received into hospital, independently of those that died on the passage, 53 of whom (very nearly one half) perished.

† Vide Report to the commander of the forces, founded on the evidence produced before the Medical Board of Officers that sat at Barbadoes, a copy of which was sent to the Medical Board, dated 28th September, 1815.

received into our hospitals without any extraordinary precaution, fear, or scruple : for though the medical schools of Europe have raved for centuries about the contagion of dysentery, of which, as their professors seldom served in armies or lived amongst organized bodies of men, they could know very little ; every regimental surgeon who has served a campaign, or surgeon of a militia regiment who has been in an autumnal encampment on any of the downs of England, knows well that however practicable it may be, through an undue accumulation of sick, and neglect of cleanliness and ventilation, to propagate a typhoid contagion under the leading form and features of dysentery, ulcer, pneumonia, &c., dysentery itself, under all ordinary circumstances of accommodation, is no more an infectious disease than hæmorrhoids or catarrh.

In regard to the contagion of yellow fever, all those best qualified to judge, that is to say, those who have spent their lives and devoted their services in the countries between the tropics, where it is so often present, are of the same opinion. I do not pretend to say that amidst the heterogeneous mixture of which our profession is composed, I have not heard some profess and even subscribe to a different belief ; but I can declare that I never knew a single instance of any one, provided he had had experience of the disease, acting as if he believed in its being contagious, or taking any of the precautions which the instinct of fear or the smallest degree of common prudence would in that case

have dictated. He was contented with voting himself contagion proof, and never scrupled to inhale the breath, or repose within the atmosphere, of the dying patient. This question, hitherto so far from being decided, that it has lately been agitated in no common degree, by the writings of two men of rank and talents in the profession, deeply affects the peace, and involves the best interests of society. I know nothing of the field on which they have written, for I have never been at Gibraltar or Cadiz. The reports of the army and my own inspection reports *, written before even I heard of any of the before-mentioned works, will prove that the barracks of Fort Royal are the most unwholesome in the West Indies, and that they have uniformly proved destructive to every white regiment that has ventured to inhabit them, however well seasoned they may have been to the climate. This was evident very lately in the case with the 15th regiment, which has now been eleven years in the West Indies, and is one of the best seasoned corps. At Barbadoes they were very healthy, having almost no complaint amongst them except an ophthalmia, which there was great reason to believe was spurious. In the month of June last, they were sent down to take the duty of Fort Royal, preparatory to giving up the island of Martinique to the French. Part of them occupied the barracks alluded to by Mr.

* Vide Report on Martinico, dated 12th September, 1815, and Appendices Nos. 5 and 6.

Pym, but not the low Bomb-proofs, and were detained there ten weeks. At first they were as healthy as usual, but towards the end of that period, they became so affected with remittent fevers as to be nearly unfit for service*; the proportion of fevers amongst that part of the corps being more than four to one, compared with the other wing of the regiment in Fort Bourbon on the hill. The sickly season had not then set fairly in, but had they continued at Fort Royal to the present time, there can scarcely be a doubt from their suffering so early and so severely, that before now they would, like other regiments in former times, have been nearly extirpated. The fort (Fort Edward, now Fort Louis) where the troops are quartered, has not only all the disadvantages of being situated on a leeward fenny shore, far down in a deep bay, but the additional ones of being at the mouth of the unwholesome carinage within pistol shot of its foulest banks, with several main trunks of profound uncleared ravines opening directly upon it from the country, and the extensive lamenteine swamps in a great degree to windward of it, which, though four miles off, communicate directly with Port Royal, by a deep marginal continuous line of swamp along the shore.

That even black troops suffered from the same cause, was evident from the case of the 8th West

* Vide Appendix, No. 12.

India regiment, inhabiting the very Bomb-proofs from which the infection is reported to have spread in the year 1793, and who were attacked in the September of last year *, with a fever (little liable as these people are to that species of disease) differing scarcely any thing from the worst yellow fever of the whites. I can prove from my own inspections, and that of the deputy inspector lately stationed there, that Case Pilote, so far from being the healthy village represented by Mr. Pym, is one where no new regiment could possibly remain healthy ; as it is low, to leeward, on the level of the sea, at the mouth of a ravine with marshy ground near it in the same ravine, and high mountains behind it, that obstruct every breeze, and reverberate the rays of the sun with a force that makes it one of the hottest places I ever saw. I am sure that the enlightened author of that work, with whatever eyes he may have viewed it twenty-three years ago, would not now venture to sleep there if he could help it, for a single night in the hot season ; at least I am sure that no other medical man experienced in these climates would : for, setting aside the peculiar unwholesomeness of Case Pilote, from its being in the mouth of a ravine, there is not one single spot at the level of the sea on the whole leeward shores, either of Martinique or Guadaloupe †, where a new regiment could be en-

* Vide Monthly Sick Report for that period.

† Vide Inspection Report on Guadaloupe.

camped during the hot season, without being destroyed by tropical fevers; more particularly if, like the regiment in question, they had just come from active service in the field; a juncture, which is ever trying to the health of troops in the purest climates and the best quarters.

One thing is certain about Case Pilote, that if the 70th regiment carried the infection of yellow fever in Mr. Pym's time, they left none of it behind them amongst the inhabitants; as has been proved by the evidence of a respectable well informed inhabitant who was living there then, and resides there now.

I presume it will not be denied, that those who served during the war in Saint Domingo, where so many British troops perished, must have had some experience of yellow fever; I remained there till the last, and saw the work of destruction completed. At first, every new comer, whether medical or otherwise, had his fears; or I should rather say, had the firmest belief in contagion; but with none, did that prejudice ever remain beyond the year. It vanished infallibly as soon as he saw and had experience of the disease; and I can declare, that during the latter years of our sojourn there, with hundreds of cases daily before our eyes, mixed in every conceivable way with the surgical, the convalescent, and the healthy *, I never even heard

* This was often inevitable from the want of hospital accommodation

the idea started, nor do I recollect a single precaution, advice, or observation that acknowledged the existence of contagion, ever being directed to the medical staff of the army from any quarter. I appeal to the writings of Dr. McLean, the living evidence of Mr. Weir, Doctor Jackson, Doctors Theodore, Gordon, Borland, Inspector Warren, and all the medical officers who served there, to bear me out in this assertion. I appeal to the evidence of every medical officer now serving in the West Indies, that has ever had experience of the disease, (for there may very probably be found contagionists among those who never saw it,) to say whether in their lives they ever met with a case of yellow fever that could with greater feasibility be traced to a personal communication with a subject labouring under the disease, than to the ordinary natural causes from which it has been proved to originate.

Another piece of doctrine has been promulgated from the writings of the authors above alluded to—that the yellow fever cannot be received by the same subject more than once. Of this we again

dation. In the 67th regiment of which I was surgeon, and which for nearly three years never sent a man away from the regiment to general hospital, I had only one large ward for the whole, without separation or partitions of any kind; and when severe ardent yellow fevers, as they often did, nearly filled the hospital, the punished, the ulcerated, the wounded, and the convalescent were obliged to retain or take a bed wherever a vacancy occurred.

who live amongst yellow fevers not only know nothing, but we see it contradicted by the daily experience of our lives. We are aware that as it is particularly a disease of the robust, the sanguineous and the rigid of fibre, he who has escaped from one serious attack is completely disqualified for a second in this climate, until he can find the means of restoring the inflammatory diathesis by a course of the unnaturally high gross living to which Englishmen are so prone; and we do not deny that the susceptibility towards a very acute disease may be greatly lessened by the exhaustion of that principle through the attack of such a one as yellow fever. But all experienced officers here have seen second attacks under those circumstances, and have witnessed two, three, and four in the same person, when cut short by timely remedies and not permitted to run their course; terminating ultimately in black vomit, hæmorrhages and death.

It is certain that if having had the West India yellow fever secures an exemption from the Gibraltar one, this last gives no security in kind. Captain Johnston, of the Queen's regiment now here, had the Gibraltar fever in 1804, and he has just now recovered with difficulty from a very alarming attack of the prevailing epidemic. It is not usual to meet with men who in the course of their lives have sustained two attacks of typhus gravior, and in as far as my experience goes, I am

satisfied that it would be more easy to find well authenticated instances amongst those who have visited the West Indies, of repeated attacks of yellow fever than of the other disease. In this small garrison, for instance, a man of the Queen's regiment died lately of aggravated yellow fever, after having since his arrival here suffered a well-marked attack of the same. Another of the 25th regiment also died in the same way a short time ago, who had been treated by Doctor Jackson for the epidemic fever that prevailed in Saint Kitt's in 1812, where his case was reckoned a remarkable one, on account of its severity, and various others of a similar kind have occurred in that corps.

The black vomit being ordinarily a mortal symptom, cannot of course be often seen twice in the same subject, and I am aware that the subtle disputant will here have a subterfuge, by denying that the first attacks could be yellow fever, the true Bulam fever. But again we have proofs even in the small island of Barbadoes, where the first patient that Dr. Caddell (a physician of the greatest experience) ever treated, had a distinct black vomit, (it made the strongest impression upon him,) he recovered miraculously, and died some years afterwards of the same disease, and with the same symptom.

A third writer of acknowledged talents has, no doubt unintentionally, done much during a series of

years to alarm the public mind on the subject of contagion. I feel that I have a right to use this language in regard to Dr. Chisholm's assertion, from the following circumstances. In page 119, Vol. II. of second edition of his work on the fevers of the West-Indies, he states that the General Elliot, East-Indiaman, imported the contagion of yellow fever into Fort Royal, Martinique, in June 1796. This was one of the ships appointed in that spring to take out the scattered remains and detachments of Admiral Christian's armament, that had been so severely handled by the elements the preceding winter. It so happened that I, being then on my way to join the 67th regiment in Saint Domingo, was ordered on board of her to take charge of the detachments of the Buffs, 38th and 60th, she was carrying out: I also acted as surgeon to the ship's crew, and can declare that when we landed at Martinique there was not a single sick human being, except the ship's carpenter, who was far gone in consumption; nor had there been the smallest illness amongst us from the day of our sailing at Portsmouth, except a very few of the slightest calentures (I had one) when we first entered the tropics, none of which endured more than twelve hours. She sailed from Portsmouth on the 15th of May, and arrived at Martinique, after touching at Barbadoes for orders on the 19th or 20th of June *.

* Vide Inspection Report on Grenada, April, 1816.

Having thus committed myself to oppugn the opinions and doctrines of men whose writings may have given them character and estimation in the world, far beyond any thing I can boast of, it seems to be right that I should state what I conceive to be the source of this endemic fever, which I deny to be ever imported and contagious.

The generality of the West-India towns, and consequently for the garrisons for the troops, are situated on the leeward shores of the country, at the bottom of the deepest bays that can be found, as a protection to their trade against the winds from the sea. The soil in such localities must always be alluvial, and is often marshy. Nine-tenths of the towns are inclosed by high hills rising immediately behind them, which exclude the breeze that in its natural course ought to reach them from the windward side of the country; and if we add to this that their elevation is generally little above the level of the sea, we shall have abundant reason for concluding, that if the highest degrees of reflected tropical heat, defective perflation, and the miasmata that reside in marshy soils or may be formed in the drier alluvial ones by heavy rains, can produce aggravated remittent fever, it must happen under such circumstances, which, so far from being corrected by an enlightened police of towns, are often forced into unnatural activity by the utter disregard of those regulations of cleanliness and order, that

all well governed communities take pride in observing.

The settlements of the planter in like manner are formed, not on the elevated mountain ridge from which the periodical rains have washed away the soil, but in the alluvial grounds beneath, where his labours can with more certainty be turned to profit. Nor is it to be wondered at under such circumstances, that a body of raw troops or young civilians, come to settle in town or country, should be swept away by tropical fevers. The wonder in fact ought to be why it does not happen with more unerring certainty ; for there are seasons and even courses of seasons under apparently similar circumstances of heat and moisture, when even the declared swamp, which no one can mistake, is comparatively innoxious to the new comer from Europe, and still more so to the seasoned inhabitant of the country* ; this begets in the young adventurer or hardened votary of wealth, a fatal delusion of confidence which, though so often exposed by the melancholy recurrence of fatal fevers, is never cured. They vote themselves secure, and despise precaution because they have escaped for a season. The constitution in fact is ever charged ; but is the power that applies the match which cannot accurately be defined or distinguished.

* Vide Inspection Report of Tobago, dated March, 1816

On the occult nature of marsh miasmata, and under what circumstances these become clothed with morbid powers, it would be as presumptuous as it would be idle in me to attempt definition, or to prescribe their laws. No one, I believe, can take it upon him to say with precision where they reside, and in what they consist; but from the reports I have already presented on the subject, I feel warranted in believing that their pestiferous quality does not necessarily depend either upon aqueous or vegetable putrefaction, however frequently it may be found combined with both; and that it never proceeds from open masses of water under any circumstances, but that it is destroyed and corrected whenever water can be brought in that state. By this I only mean to say, that the miasmata are not generated from the body of the lake or pool, but from its drying or half dried margins. The swamp is no more than this margin rolled up under another shape. Water kept in stone tanks or any where so that it can be preserved in bulk, without being absorbed by the surrounding soil, gives out no morbid miasmata. One of the healthiest quarters in the West Indies, is that of the field-officers on Berkshire-hill, Saint Vincent's, the bed-room of which is placed immediately over a deep stone reservoir of water. A blockhouse in Demarara, reported to be one of the healthiest quarters there, is similarly situated; and it is known to all that the fresh water laid for

a ship's crew, however putrid, and however much in contact with their sleeping places, produces nothing like marsh fever amongst them. I contend also that it is very certainly generated from the paucity of water where it has previously abounded, provided that paucity be short of actual dryness; that a high temperature of atmospherical heat is indispensable towards its production, and that in proportion to the intensity of temperature, is the intensity of power in the miasmata produced, varying in its effects on the human frame, from the ordinary ague of Europe, and the fever of the mountains of the West-Indies, to the highest degree of aggravated remittent or yellow fever, which is never found remote from the level of the sea; that it is comparatively innoxious to those who have had the good fortune during healthy seasons to become habituated to its influence; and that it attacks with singular peculiarity of selection the robust, the young, and the healthy, in their first approach to its abode. If these be granted me, I think we may be able to explain from the various compositions of soil, its elevation, aspect, and texture, as affording capacity to retain moisture, why every dry one can be brought during an uncommonly wet season, through the influence of tropical heat, into the state of a marsh that gives out noxious vapours, and a marshy one approaching to dryness through previous draught may be made perfectly healthy from the same abundant rains.

A comparison between the present state of the islands of Barbados and Trinidad, will, I think, exemplify this. Every one who knows both countries must allow that the cleared calcareous soil of Barbados is by far the most salubrious of the two, and that Bridgetown, bad as it is, is much more healthily situated than part of Spain; yet Trinidad throughout has been perfectly healthy for several months past, while Barbados has been greatly afflicted with the very worst yellow fevers. In both places it has rained abundantly, particularly in Trinidad, where they may be said to have had ten months' rain out of the last twelve. These have preserved its extensive marshes ever fresh, and condensed the paludal gases; while they converted the alluvial soil on the shelves of table land at Barbados into temporary swamps. At Trinidad it ordinarily rains more than 200 days every year, to which the inhabitants owe their preservation in a great degree, from the worst marsh fevers. During a very dry season several years ago, they suffered most dreadfully from them.

On a smaller scale, and at one *coup d'œil*, an example of the same may often be seen in the island of Saint Lucia, where it has commonly been remarked, that when the garrison on the lofty position of Morné Fortuné is healthy during the fine dry weather, the inhabitants of the town of Castries, at the base of the same hill immediately below, within half cannon shot, are visited by the

worst fevers and *vice versa* : the dry weather gives activity to the miasmata, which the rains dilute, refresh, or condense, at the same time that they are forming pools and temporary swamps on the shoulders of the hill, immediately beneath the barracks, on the summit of Morné Fortuné.

We may likewise in the same way explain why a deep ravine, impervious to the rays of the sun and free current of the winds, that has been a water-course, or where water has stagnated in the wet season, may still, after its surface appears dried by the summer heat, have retained sufficient underground moisture to give out the most dangerous miasmata, the more dangerous because the more concentrated, from having never been dispelled by the winds. Why in fine, the healthy and unhealthy soils may, under such circumstances, change places in regard to health, and localities in the neighbourhood of each, under the same modifications of climate, be very differently affected.

In the attempts that have been made to establish the point of yellow fever being a new disease, and belonging altogether to a different family from that of the intermittent and remittent class, much stress has been laid on its seldom occurring at the same time with ague, and its rarely breaking off on convalescence into that type ; but, as has been said before, ague is not a common production, however obvious and abundant its sources may be,

in the hot lowlands on or near the level of the sea, where alone the yellow fever is found. It is very rare for instance, to hear of an ague originating in the leeward sea-port town of Basse Terre, Guadeloupe, either amongst the troops there or the inhabitants; but in the barracks on the cool marshy hills above the town, at an elevation of less than 1000 feet, it was a very common disease both amongst the officers and the soldiers, while their comrades of the same corps in the barracks of the town, suffered from the more concentrated forms of remittent fever alone. The same may be said of nearly the whole of the West-India towns. They are all so marshy that in colder latitudes they could not possibly escape being infested with agues, but these very seldom originate, and are nearly unknown amongst them. In this way it is common to hear the inhabitants of Barbadoes boast that an ague cannot be found in their island; although they have various marshes, particularly near Bridgetown, and during sickly seasons come in for their share of yellow fever. The reason is plain: there are very few ridges in Barbadoes of sufficient elevation to belong to the region of ague, even supposing their sides to be marshy which they never are (they are of the driest calcareous strata). The marshes are all in the lowest levels of land; and when their morbidic miasmata act upon the human body, they produce the greater or less concentrated forms of remittent fever, according as their powers are regulated by the temperature and

climate of the season, or as the subject is presented under more or less favourable circumstances of seasoning, excitement, &c.*

This subject is not without difficulties, for it is certain that for years together, these supposed fomites of fever are comparatively harmless; and that at other times new comers suffer the worst attacks in places where it is difficult even to imagine the existence of any thing like marsh miasmata. Hence it has been usual in the West-Indies to believe that there are two forms of yellow fever originating from different causes, the one from the marsh poison, the other from pure excitement in the stranger, both so perfectly alike that the most experienced cannot distinguish any difference; but this surely is not more strange than that fevers exactly the same as marsh fevers, should originate in the driest ravines of hot countries, and that the effects of the Mediterranean, and I may add the Peninsular Malaria, are experienced in the most arid, often even elevated scites, where the existence of miasmata is certainly less demonstrable than in nine-tenths of the West-India localities.

I am far from presuming to deny (though I believe the contrary, for the reasons given in my answer to the queries upon the Regalia,) that there may be such a fever as that from pure excitement;

* Vide Note at the End.

for soldiers and others have been attacked and died of yellow fever before they landed in the West-Indies, or could be exposed to the influence of land miasmata in any shape. From this it would appear that a calenture, the synocha of Cullen, (the pure offspring of heat, as pneumonia is of cold) runs a course similar to the yellow fever, and to use the language of the humoral pathologist, that the blood is broken down and dissolved by its action, the vessels of the stomach, and under the skin, giving way in a remarkable manner, the same as in what has been called the true Bulam. The inference to be deduced in that case, must be that all violent tropical fevers have a tendency to run into this corruption of the fluids, or morbid incontractability of vessels, as much as the synochous fevers in the hospitals of England are prone to assume the typhous types when long protracted.

To the argument that the highest degree of concentrated remittent or yellow fever, should neither remit nor break off into ague, it seems sufficient to reply, that for any disease to observe regular laws, it is necessary that the vital organs principally affected should continue in a certain degree of integrity; that their functions should only be perverted and disturbed to a given point; that they should still be discernible as functions, and not be utterly overwhelmed and extinguished by the violent cerebral action and speedy gangrene of the stomach that takes place in aggravated yellow fever. As

the ulcer of a specific poison that would run a regulated course according to acknowledged laws, if it be driven to a high inflammation or sphacelus, no longer belongs to the original stock, and is emancipated from those laws ; so the violent actions of the above fever impair and destroy the animal functions by which its crises and remissions are regulated, or speedily engender a new disease ; as new as the conversion of an ordinary venereal chancre into a phagedenic slough, through the application of a potential cautery.

I feel that this almost inscrutable subject is at present greatly beyond my depth : I wish only to shew that the difficulties of reconciling the phenomena of remittent with what has been called yellow fever, are not so great as what has been represented, nor greater than what exist in many other diseases, respecting the identity and origin of which the same difficulties have not been started. The difference between the different degrees of the intertropical fever, that are characterized by irritability of stomach, and terminate occasionally in discolorations of the skin or what have been called remittent, bilious remittent, and Bulam, are surely not greater than what we see daily in another disease at home, which, however, is propagated by different laws. There scarlatina will attack one patient in a form so mild, that but for the subsequent desquamation of the cuticle, it would be difficult to detect its existence. Another will have vivid erup-

tions and high phlogistic symptoms, while a third exhibits a low putrid malignant plague, with gangrenous sore throat, and scarcely any eruptions at all. No one thinks of doubting the identity of the disease in these three conditions, because they have all one common property, the capability of communicating the infection to others; but this last is not an essential quality of many other acute distempers, nor is it more characteristic than that of the Bulam fever being limited almost exclusively to the unseasoned and the stranger. It is surely more probable that the endemic causes of disease should operate upon their unseasoned bodies with peculiar severity, so as to produce something more than an ordinary remittent fever, than that they should remain altogether exempted from their operation, and even while the Creoles and the seasoned are suffering their limited share of endemic ills, be amenable solely to a peculiar contagion reserved altogether for their use, or imported with incomprehensible punctuality for the occasion of armaments newly arrived, sultry calms and long continued droughts, by which the exhalations from the earth are known to be sublimed into peculiar activity.

It is fortunate that amidst the labyrinth of conjecture in which the medical inquirer finds himself bewildered, there are nevertheless some points in regard to this fever, where he will find a firm

footing from which he is not to be taken down. These I would arrange in the following order.

1st. That the yellow fever never begins, and cannot continue to exist in a temperature of heat lower than the ordinary temperature of the tropics, on the level of the sea; which temperature is not the ordinary one of agues, however moist the soil may be, but of remittents and the higher degrees of ardent fever.

2nd. That even within the tropics, it is confined in all the islands to the sea-coast; and can only spread into the interior of continents where the country is flat and low, possessing little elevation above that level, and retaining the above temperature.

3rd. That it uniformly is more apt to arise and to spread where miasmata, or what would constitute the elements of intermittent or remittent fevers in colder countries, openly abound.

4th. That a comparatively high degree of bodily vigour and rigidity of fibre, such as the young sanguineous newly arrived European ordinarily brings with him to the West Indies, is for the most part essential to the developement of the disease.

5th. That Europeans suffer in point of priority

and severity of attack, precisely in the degree that they possess the foresaid vigour of constitution, and that when relaxed by long residence or other causes, they become like the Creoles and people of colour, in a great degree exempt from its influence.

The above positions I believe to be indisputable by any controversialist. They are proved by the evidence of many authors, and can be made evident to every observer. The more difficult points to establish (because not admitting of the same proofs) are that occult miasmata, to the amount that constitutes malaria, if I may use that expression, exist in most of the low leeward alluvial situations where strangers always first arrive at, and commonly reside.

By malaria as never belonging to open marshes, I mean to express something that is more decidedly than miasmata the product of underground moisture, which can only be sublimed, so as to produce its specific effects, by long continued solar heat ; a more subtle miasma in fact, of which the surface gives no warning, but of which the existence is proved from its effects on habitations that are placed in the drought of the dry ditches of forts, no matter how rocky or dry, if they are deep and of deep ravines. At Fort Matilda, in Basseterre, Guadaloupe, a well raised artillery store-house and guard-room placed in a bouchure, at the confluence

of two of the ditches, was found to be utterly uninhabitable. The best seasoned of our old artillery-men were sure to be seized with fever if they slept there a single night; there was a spring of pure water out of the rock in one of the ditches, the course of which was kept clear, but that made no difference in point of health. The same malign influence was observed to affect houses that were placed opposite the deep ravines of rivers, no matter how pure and pebbly the channel, as also all dwellings situated on the leeward base of the mountains.

Another point of inquiry is, whether these effluvia during certain states of stagnation of atmosphere, such as during the sultry calms of the hurricane months in the West Indies, accumulate in the dirty ill ventilated streets of West India towns, to the particular danger of all who are unseasoned to their influence; and whether the constitution of newly arrived strangers from colder countries, when attacked by fever in these situations, is prone to run into, or I should rather say, incapable of assuming any forms but those of the highest degree of ardent fever, from the circumstances laid down in the foregoing position, No. 4.

Why these miasmata should lie dormant for years, and then as if they had been accumulating all the while, burst forth with pestilential epidemic current, as they sometimes do, even to the destruc-

tion of the best seasoned, I cannot pretend to explain. I believe, however, that the healthiness of seasons in unhealthy climates will be found to depend less on the amount of actual heat and moisture, which has been so often observed and recorded with accuracy by scientific men, than on the ventilation of the climates by powerful regular winds, like the trade-wind between the tropics* ; that towns and districts of country will be found *cæteris paribus* to be healthy or otherwise in proportion as they enjoy more or less of this purifying influence ; and that whenever it has been withheld for a time, the accumulated morbidic emanations from underground moisture will act upon the human body like the accumulated typhoid principle in crowded hospitals, when undiluted with a due proportion of atmospheric air.

I think it must be evident that in these climates we are often on the brink of pestilence (I use the words pestilence and pestilential throughout this paper merely to signify epidemic) without being aware of our danger, and ignorant consequently of the means by which our escape has been effected. The presence or absence of rain, the continuance of calms, or accession of a particular wind at a particular time ; the accumulation of people in towns, and the arrival amongst them of strangers at

* For the last four months there has nearly been an extinction of this wind at Barbadoes.

particular seasons to furnish moral food for panic, and embody that principle so as to unnerve the whole community, and, when endemic disease breaks out, to give epidemic current : all these, in my opinion, act powerfully to influence the rise and progress of endemic fevers ; and they will affect different places as variously as the variety of their soils and the position and form of the country. Thus even to our imperfect knowledge the epidemic visitation this season of yellow fever at Guadeloupe, Barbadoes, and Antigua, while it has spared the equally or more unhealthy countries of Trinidad, Tobago, and Saint Lucia, and when imported into Saint Vincent's would not remain there, may appear less capricious and unaccountable. It would have done the same to the writers on the fever of Spain, if they had not dismissed all their doubts, and set inquiry to rest by attributing the whole to imported contagion. But had they inquired, instead of peremptorily deciding, they might have found that during the epidemic visitation of these fevers, not only do towns and districts escape altogether, as we see at present in the West Indies, but that different parts of the same town are differently affected : and so limited often is their influence, that one story of a house and one section of a ship will be strongly affected by it, while all other parts of the same tenements remain healthy, and then their wonder at what has been called the desultory progress of this fever during the short course of an European autumn, need not have been

so great as to have been inexplicable through any source but that to which they referred it. At Barbadoes our hospitals of late have been in a regular course of importation of the yellow fever from the navy, but not even inoculation has been able to produce the disease upon any member of the hospital corps, by whom I may truly say that the sick have been with open arms; for the antisocial doctrines of ideal contagions are not preached amongst us here, to the prejudice of duty and humanity.

Hospital assistant Moon, on opening the body of a patient that had died of very aggravated yellow fever, wounded his finger. The wound produced high inflammation, similar to what occurs in the dissection rooms of England, running up the course of the lymphatics to the glands of the axilla, with symptomatic fever, but no more.

An example of the efficacy of quarantine laws where no contagion exists, may here be amusing. At Martinique they established a strict quarantine, particularly directed against Guadaloupe, and they have been consumed with yellow fevers; but at Dominique, Tobago, Saint Vincent's, &c. where they established none at all, they have not had, in as far as I have learnt, a single case, although at the last-mentioned island both the Tigris and Childers ships of war imported distinct well-marked instances of the disease from Point au Pitre, on the eve-

cuation of Guadaloupe. The first of the above ships continued healthy for nearly three months afterwards; the second has been the subject of a particular report.

It is now several years since the highest degree of remittent or yellow fever has prevailed epidemically in the West Indies. Sporadic cases have been constantly occurring, but this season it has visited in a remarkable manner some of the unhealthiest of the towns, such as Point au Pitre and Basseterre, Saint John's, Antigua, and Bridgetown, Barbadoes. In all it has been confined for the most part to the towns, and, except at Bridgetown, to unseasoned Europeans. There it extended to unseasoned sojourners, even Creoles from the interior of the country, who in the time of the insurrection were obliged to resort to the town on military duty. The French strangers from Europe suffered more severely in Guadaloupe than I had ever known any importation of similar numbers do in the British colonies. In no one instance was an attack of true yellow fever seen amongst the British troops there; but if any one doubted of their suffering from the same exciting causes of fever, though modified from the circumstances of seasoning, he might in the course of half an hour's ride any morning have satisfied himself of the identity of the three diseases, in the persons of the stranger expiring in his lodgings with black vomit and hæmorrhages (Vide Appendix No. 8.); the

seasoned soldier at the hospital close by, probably during the same, under the regular type of remittent fever, with a retentive stomach and comatose brain; or the same description of subject, or planter of the country, undergoing the regular paroxysm of ague in the cooler quarters of Valtier or Beau Soleil Barracks, on the higher grounds immediately above the town.

At Barbadoes the distinction and identity has been still more nicely marked. There a perfectly raw newly arrived regiment (the Queen's) came out from England in May, and were quartered in Saint Ann's Barracks, on a comparatively elevated table of well ventilated rocky land, at a time that numerous civilian strangers were arriving at the hot unwholesome town within the distance of a mile, and the communication between the barracks and the town had not been restrained by any regulation. These last have been cut off in a great proportion by the very worst symptoms of yellow fever; but though the Queen's have lost many men from severe well marked remittent fevers, only eight* of those amongst the equally unseasoned military arrived at the highest degree of yellow fever, as characterized by black vomitings and hæmorrhages. Their fatal fevers have often approached very near to it; the remittent form

* Several more have occurred since this paper was written.

losing type as it always does, when aggravated so as to become ardent and continued, with constant vomitings ; but except in the eight cases just mentioned, none of them shewed the diagnostic symptoms of the very highest degree, which were almost invariably present upon those that died in the town.

The 25th and 60th regiments have in like manner had numerous cases that died with a yellow or fuscous livid skin after frequent vomitings, that were sometimes ropy and brownish, but never black. The colour of the matter vomited is not essential to constitute the diagnosis of this form of fever ; but the increase of the fluid ejected beyond what has been taken in, more particularly if glairy, certainly is, and decidedly marks the gastric affection.

Here within a very short space we see a minute modification of cause operating as minute a difference in the form of the fever ;—a precise one however, from which the inference is unquestionable, that the troops and their neighbours the Civilians were not on the same niche, but certainly within the same pale of morbid influences.

The difference of heat between the barracks and the streets of the town, as marked by the thermometer, has been seldom less than four, and

often as much as six degrees, during all the hot sultry days of the present season. How long they are to preserve that station of health is doubtful, for there are marshes in abundance immediately to leeward of Saint Ann's, which, in close sultry seasons like the present, have produced amongst the newly arrived military the very worst degrees of ardent tropical fever. And here, as marking the nicer shades of malarious influence, and the total absence of contagion, it may not be uninteresting to remark, that though the Queen's inhabited a large barrack in common with part of the well seasoned 25th and 60th regiments, they alone experienced any difference of health between those that inhabited the ground-floors and the upper story* ; that no infection spread from their cases of black vomit among themselves, or to their comrades of the other regiments in the same barrack ; that they have lost no hospital servants from fever, and had scarcely any sick† ; that all the white servants in the hospitals at Barbadoes, though engaged in attending many of the worst cases of yellow fever that ever were seen as landed from the navy, have been healthier beyond all com-

* Vide Appendix, No. 10.

† They have employed too their full share of hospital servants ; their sick, though victualled in the general hospital for want of a regimental one, being arranged there regimentally, and attended by their own medical officers and servants, under the direction of the physician.

pare, and suffered less from fever in proportion to their numbers, than any other class of military in garrison*; and that no case of fever has occurred in the person of any medical officer, except one, who, for five weeks previously, had been stationed at a healthy military port in the country, remote from the theatre of fevers and from all the hospitals.

This remarkable exemption of the hospital servants, certainly goes to prove what has so often been observed here, that when the body is charged with the elements of fever, (whatever these may be), its immediate exciting causes are exposure to the heat of the sun, more especially when fatigued with exercise, getting wet, and drunkenness; to all of which the hospital orderlies were much less exposed than the troops in barracks. Of our medical staff, the physician and five of the assistants are of the class of the newly arrived, and amongst the rest, few have had the benefit of the preservative (a previous attack) mentioned by Mr. Pym. The hospital assistant that died was stationed in one of the healthiest posts of the West Indies, where, with the exception of one woman, there has not been a single case of fever reported during the whole season. His death was accounted for in the statement I transmitted of his case.

I have dilated upon these facts because it is only

* Vide Appendix, No. 11.

from observations upon masses of men, and comparisons made under different circumstances, that well founded conclusions can be drawn in respect to the causes and properties of disease. Thus whoever has seen the greater portion of an army affected with dysentery or a particular kind of fever, with hundreds of cases and facts constantly before his eyes, can scarcely fail to know whether these diseases are contagious or not. The physician in civil life, however superior he may be in learning and talents, as he sees only insulated cases, cannot have the same advantages, and must be much more liable to form erroneous conclusions. He may see for instance, during the autumnal season of Europe, the inhabitants of a humid unwholesome house fall ill with dysentery one after the other, according to the degree of predisposition or stamina of resistance in the respective individuals, and thence conclude with much apparent justice, that dysentery is a contagious disease; but take him to the well regulated encampment, and shew him in its hospitals, what every experienced medical officer has seen, a thousand dysenteric patients attended by a hundred servants, without affecting one of the attendants, he certainly would for ever be cured of the delusion. In like manner, when he comes to practise in a West India town, he may find a yellow fever in an endemial house, (if I may use the expression), which, in conformity to the above rule, attacks in succession all its inhabitants, and from thence make his proclamation of contagion to the af-

frighted people; but if he stepped to the neighbouring military hospital, and saw the same description of patients mixed in every conceivable variety with the convalescent, the surgical and the healthy, yet affecting no one, he would never after that, whatever he might say, believe it to be a contagious disease.

A remarkable instance of this lately occurred here, in the practice of Dr. Caddell. Two Creole ladies inhabited an insulated house, in the low suburbs of Bridgetown. It was ascertained that partly through indolence or fear, neither of them had gone out beyond their own premises for ten weeks previously, yet at the end of that time, and without any discoverable or even supposable communication with the sick in the town, both took the yellow fever, and one of them died of the black vomit.

Unfortunately these opportunities of observation are not always sought for; and as experience of yellow fever in civil life, is often trifling, limited to particular seasons and circumstances of exposure in the subject, he may, though difficult to experience, believe in his doctrines of contagion to the end, and do his utmost to alarm the public; but the military medical officer, who has once seen the disease in the gross, as it affects newly arrived troops here, never can be deceived in respect to its non-contagious character, (if his mind be capable

of distinguishing truth from error,) and in fact never is in these climates.

Another reason why, for a course of years, there has been little yellow fever in the West Indies, may also be, because the pabulum of the disease has not been supplied from the colder regions in the wonted quantities. The last importation of troops in regiments previous to the arrival of the Queen's being upwards of seven years ago, with the exception of two regiments, the 4th and 60th, composed of foreigners, and the York Chasseurs, composed of deserters of all descriptions, and crowds of civilians that used to shoal out and perish here, having found employment through the circumstances of the war elsewhere. All the regiments however now here, so long underwent the ordeal of seasoning in no long time after their arrival, and buried a large portion of their youngest soldiers. The recruits that successively came out to them fared better; instead of finding themselves in a community at their first arrival, where all was inexperience and panic, they became at once members of a healthy seasoned body, and were taught by experienced officers as well as by the experience of their comrades, how to take care of themselves. In this way confidence was inspired, and they suffered but little; but if new regiments are to be sent out in corps, and the current of emigration is again to be directed towards the colonies, it will soon be seen that the yellow fever was only weak-

ened from want of its proper food, and that it will again prevail for as long as that food is supplied.

I trust that in the foregoing, and in the Appendix subjoined, it will be seen that I have adduced some facts, and supported them by reasonings, to shew that the remittent, the bilious remittent, and the Bulam, belong to the same family, and are only different degrees of intertropical fever ; that they, no more than other severe fevers, exempt the patient from suffering subsequent attacks ; that under ordinary circumstances of ventilation, they are not contagious ; that their origin is always endemic ; and that therefore the idea of their ever being propagated from imported contagion is chimerical.

Under the contrary circumstances I have no doubt but that a typhoid infection may exist here the same as elsewhere, which, however, is certainly dissipated, as soon as ventilation and purity are restored. This was exemplified in the Childers brig that lately arrived at Barbadoes, in so distressing a state from Trinidad. The fevers on board of her from crowding below decks when at sea, ceased to be yellow ones, and became as truly typhoid as any I ever saw ; but all that were taken ill after she came into harbour, were promptly removed to our excellent hospital, retained the character of yellow fevers in every respect, and shewed not the least of the typhoid type. That the ship was impregnated with a typhoid contagion, capable

of infecting others within its sphere, I have as little doubt; and am sure from what I have seen, that crowded hospitals on shore may be brought for a time to the same dangerous condition from undue accumulation of sick, even in these climates. Some well marked cases of typhous fever, and others of a mixed nature, have lately been sent to the hospital, from the huts in the rear of the barrack of the Queen's regiment, into which the married people of that corps crowded in great numbers, and they had become in consequence dirty and ill ventilated to a very great degree. Some of these huts, containing more than one family, where washing and every species of nuisance and disorder was to be found, did not contain more than ten feet by eight within their walls, which were of the thinnest shingles, and afforded little or no protection against the sun's heat.

I cannot pretend altogether to say, that I have proved these points; for how few amongst the ever changing phænomena of diseases, admit of being subjected to the rules of evidence! and I am aware of how much I have been favoured by circumstances, and of what a different interpretation the facts I have collected would have borne, had the present epidemic that now afflicts the islands broke out in the ordinary course of the seasons a year earlier, at the time the Regalia was here; for these, instead of assisting me to elicit the truth in the manner they have done, would in that case have been turned to

the confirmation of error, and the perpetuation of the delusion in regard to imported contagions.

Signed,

W. FERGUSON,

Inspector of Hospitals.

NOTE.

Barbadoes, with the exception of Bridgetown, is the healthiest of the islands, because it is the best cleared, and has no mountain lines to obstruct the sea breeze. The soil is calcareous, disposed for the most part throughout a successive series of ridges on shelves or tables of land without rivers or water-courses to carry off moisture ; but the trade wind makes a constant breach over it, to use a nautical expression, night and day ; and though it has marshes, they are so uniformly swept by the current of air, that a stranger is stared at when he inquires if they are not unwholesome. In fact they rarely prove injurious to the health of the seasoned settlers, though they are highly capable of being so in close sultry weather, like that of the present most unnatural season ; but to tell them so either in Barbadoes or elsewhere, would only be a waste of words. Whoever has escaped for a season, can never afterwards be made to believe that the marsh is unwholesome either to himself or to others, and when overtaken by endemic fevers, he lays the blame on the sun, the moon, atmospherical vicissitudes, errors in diet, or infection, &c. Even the medical men, who

ought to know better, are often thrown off their guard by this delusion of experience, and from being themselves in unwholesome localities, give countenance to the errors of the people. No one, after he has once committed himself to a choice of residence, likes to be told that from want of knowledge he has acted without due precaution, and he cherishes and defends the error, like the virtuous prejudices of national partiality, even though he himself should fall a victim. In this way the attempt to convince will generally be vain. The inhabitants will continue to live where they have lived before, often escaping themselves, but still more frequently deluding the unseasoned to their destruction. Bridgetown has abundance of marshes even to windward, yet no one ever thinks of draining them, and when the stranger is startled at their appearance, the inhabitants point to their old men and bid him dispel his fears. Two Generals'* families flourished bodily within the last 12 years, at the Government House on the outskirts of the town; yet for all that time and for how much longer I cannot tell, there was till very lately a foul open piece of swamp behind one part of the premises, which could have been thoroughly drained at any time by sinking for a few yards a drain of two feet in depth.

* Sir William Myers, and General Grenfield.

APPENDIX I.

Extract of Inspection Report to the Commander of the Forces, on the State of the Regalia Transport on the 26th of September, 1815, then appointed to carry home Invalids to England.

1. That the crew on the coast of Africa was healthy till the blacks were sent on board.
2. That about the same time that the blacks embarked, a quantity of green wood was laid in for fuel.
3. That soon after the fever broke out, and several were taken ill, and two died the first day after sailing.
4. That the crew continued to fall ill one after another on the passage, until all except one boy had suffered attacks of fever, and five out of twenty-one had died before arriving at Barbadoes.
5. That the captain's wife sickened and died after making the harbour where the ship remained four days, and that the captain immediately after sickened and died, on the passage to the Saints.
6. That the ship remained two days at the Saints, after which she sailed for Antigua, where she remained three days before returning to Bar-

badoes, during which time a mate that had been shipped at Barbadoes, from another of the African ships reported to be healthy, sickened and died. Also a boy that had been taken at Barbadoes from the Lord Eldon, then a perfectly healthy transport, fell ill and was sent to the hospital; and the apprentice to the ship, the only individual that had hitherto escaped, for the first time took the fever.

7. That on her return to Barbadoes she shipped a new mate from a healthy Newfoundland ship, who on the ninth morning of his being on board, was found by me in a state of fever, and sent to the hospital.

8. That during the passage from Sierra Leone, and the short voyages through the islands, she has been under a constant course of fumigations by fires and otherwise; that she has now been fresh painted, and is at present, and according to every evidence that could be collected, has been in as clean a state as possible.

9. That all who died were affected with vomitings and bleedings from the mouth, nose, and other places.

Addenda.

10. That the Regalia shipped three fresh men about the time the crew commenced the work of clearing her hold, one of whom took the fever and

was sent to the hospital in Barbadoes, and another died at Guadaloupe of the yellow fever on her passage home.

11. That no yellow fever existed at that time in Bridgetown, amongst the ships in the bay, or the troops in garrison; the first case of yellow fever that was heard of in the town, occurred about the beginning of the succeeding year, in the person of a youth, a stranger from Europe, belonging to one of the mercantile houses, and that for more than twelve months after the arrival of the Regalia, none but insulated sporadic cases of that disease were known in Barbadoes.

APPENDIX II.

Extract of a Communication to the Commissioners for Transports, on the supposed Infectious Property of Yellow Fever so called, by Mr. MORTIMER, Principal Naval Medical Officer at Barbadoes.

We do not allow the fever of the West Indies commonly called "yellow fever," to be at all infectious in any of its forms or stages.

"We have never known of an instance of its communication to patients at the several naval hospitals, whilst under cure for other complaints,

though such patients have never been interdicted, on the contrary, encouraged to offer every additional aid, for the greater comfort of their suffering brethren.

“ We are of opinion, in contradiction to that stated to be Dr. Bancroft’s, that vapours emitted from holds of ships, having in them the commixture of various animal and vegetable substances, in a state of putrefaction, are quite sufficient for the production of the worst kind of Bulam fevers ; that to such effluvia may be justly attributed much of the depopulation occurring amongst Europeans in intertropical climates.

“ We are borne out in this opinion from the numerous examples happening in our own practice, a few of which have been related, and of others made known to us by men of indefatigable research, and of unquestioned veracity.

“ We have shewn in the history of the Regalia Transport, that she continued perfectly healthy during the several weeks she was employed on the African coast, and until she shipped a quantity of green wood, cut down and brought on board the same day. We have it in proof that fever made its appearance soon afterwards ; that it prevailed with unabated malignity on her arrival at Barbadoes, where it was asserted she had imported in

the persons of black recruits a highly pestilential disease.

“ We have it furthermore in evidence, that whilst at English harbour she underwent fumigation as ordered by Commissioner Lewis, without the least effect in arresting future attacks, or their fatality ; and that it was not until after her arrival in Carlisle Bay, where she was *completely cleared, and with her hatchways closed, her whole hold exposed to the concentrated heat of many stoves, that fever ceased.*

“ That the causes existed in the vessel, and that they were of most malignant kind, are evidenced by their speedy effects on every man engaged to renew the place of the one dead ; and if to the most incredulous further proof were deemed necessary, it might be adduced in its fatal operation on the cook of the ship (a man who died here), a man upwards of fifty years old, and the only one of the original ship’s crew, who had, up to the period of the cleaning of the hold, been exempted from seizure.

“ I have particularized this ship, because she is not only the most recent instance of the decided effects of the noxious effluvia on the human constitution ; but because, to the authority and weight of representation from Dr. Fergusson, Inspector of

army hospitals, may be attributed the prompt clearance of the vessel, and I fully believe therefore, the safety of many lives.”

Signed,

JOHN MORTIMER.

APPENDIX III.

Report of Deputy Inspector FORBES, on a Case of Fever belonging to the Regalia Transport, that terminated fatally in the Navy Hospital at Barbadoes.

“ James Champion. Case of fever which terminated fatally.

“ On Sunday he was seized with long and continued rigors, succeeded by a short period of heat, pain in the eyes, loins and lower extremities : belly costive ; these symptoms subsided altogether, and he remained well till the next day at three o'clock, when a similar attack recurred, and he was received at the Naval Hospital at noon this day. The belly continuing bound, purgatives were administered with such relief, that in the evening he again considered himself well. The following day his eyes became of a dark red ; he complained of a deep seated pain in his head, and accompanied by great increase of heat ; blood was then drawn from the

arm and temporal artery ; large doses of calomel were administered, also friction with mercurial ointment ; a blister was applied to the head, and sinapisms to the feet. These symptoms continued until Wednesday, when they became accompanied with constant vomiting, the fluid exhibited a coffee colour, and latterly much affected with spasm.

“ He died this day at two o’clock, P.M.

Dissection.

“ The head and stomach exhibited great marks of inflammation ; the vessels of the meninges were loaded with blood ; the surface of the brain, especially in the course of the longitudinal sinus, very turgid ; the outer coat of the stomach as though rubbed off by a blow, and the inside surface in several parts of a mottled appearance, and contained about half a pint of fluid of a dirty brown hue ; the gall-bladder was distended with fluid of the same appearance ; the liver was spotted in various parts ; the other part of the viscera did not exhibit any marks of disease. The body was not in the least discoloured after death.

“ This man had been ill for some days previous to his being sent to the hospital, and by the man’s own account, seems to have been brought on by

sleeping on deck, and getting thoroughly wet, and remaining in that state without changing."

Signed,

P. FORBES,

Deputy Inspector.

APPENDIX IV.

Report of Acting Staff Surgeon AYTON on a Case of Fever that terminated fatally, on Board the *Regalia* Transport, Basseterre Roads, Guadeloupe.

Vaulters, Guadeloupe, February 27th, 1816.

SIR,

" In compliance with your request, I beg leave to state to you, that I visited the transport ship *Regalia*, on her arrival here from Barbadoes, I believe early in the month of last November. I inspected the ship's crew, and found them perfectly healthy with the exception of one man, who I was told had been ill three or four days : he was a stout young man, of a full habit : he complained of pain in the fore part of his head, with sickness of stomach ; the eyes were suffused, the tongue loaded, and there was a dingy yellowness about the neck : the pulse was a little quickened, but not irregular or hard, and the skin moist with no very great degree of heat. I could not exactly ascertain what

medicine he had taken, but I directed the following to be given him immediately;

R Hydr. Submur. gr. x.

Pulv. Jalap. ʒj M. ft. pulv.

this was about three o'clock in the afternoon; the next morning as I was proceeding to the beach to go on board, I met the captain of her who informed me the man had just before died, having previously vomited a quantity of black matter."

Signed,

R. AYTON,

Acting Staff Surgeon to the Forces.

To Dr. Fergusson,

Inspector of Hospitals, &c. &c.

APPENDIX V.

Extract of Inspection Report on the Island of Martinique, by DOCTOR MENZIES, Deputy Inspector of Hospitals.

" The Bomb-Proofs are excavations made in the rock below all the works, and near the level of the sea. On the right of the road, betwixt the first and third of these, the rock is of soft sandstone; the entrances are on a level with the road, and the square openings intended as windows somewhat higher. The height of the apartments is eight or nine feet, the breadth about twelve; they are neither paved nor floored, and there are no ham-

mock rails, nor the appearance of there ever having been any : indeed they have seldom been occupied except during a siege. In rainy weather there is an oozing of water from the roof and sides anteriorly, which renders them damp. Some part of the rock above these Bomb-Proofs, has the appearance of a concretion of sand and small stones. There are, at one end, interior rooms with arched passages leading to them, and air-holes cut perpendicularly for the admission of light, and which may create some ventilation.

“ The principal remarks that seem to offer regarding the salubrity of these as a quarter for troops, are the uncommon lowness of them, there being a barrier gate at each end ; a wall of fifteen feet directly to windward of them, and no thoroughfare, nor means of creating a draught of air, except the partial air-holes alluded to, as well as the necessary dampness, both from the nature of the rock, and from the non-admission of air to purify, and to correct humidity after rains ; and these independent of the general situation of Fort Edward, in regard to the surrounding country.”

Signed,

ALEXANDER MENZIES,
Deputy Inspector of Hospitals.

APPENDIX VI.

Extract from the same Report.

“ In the third of these ravines, but by much the most considerable, is the village of Case Pilote, built on the beach. There is a church and endowment for a clergyman ; the soil seems good, and the sugar-cane grows on a small scale. There are two streams that run into the sea upon each flank of the village, and the wind observes the same course as at Case Navierre. The extreme breadth of the ravine did not appear to me to exceed three-fourths of a mile in the broadest part, and not more than one-fourth at the village ; and the apparent extent towards the mountains, not more than a mile, at least, before the view terminates. I have not learnt that to the natives this place is unhealthy ; what it might prove to new comers I have some doubt ; from analogy drawn from other places similarly situated, I should not consider it as healthy. One of these streams takes a sweep and terminates in a serpentine pool of almost stagnant water, close upon the village. The ground adjacent, to no great extent however, is low and swampy. The principal remarks that occur respecting the salubrity of this place, are its being confined in its extent, surrounded with uncultivated grounds, having a partial swamp, not inconsiderable in comparison to the limits of the place ; and its being exposed to the oblique rays of the descending sun, on the shore at

the foot of the immense steep mountains, and those bearing north-east almost directly to windward."

Signed,

ALEXANDER MENZIES,
Deputy Inspector of Hospitals.

APPENDIX VII.

Deputy Inspector FORBES'S Statement of Admissions, Deaths, and Discharges, of the unattached African Recruits.

Periods.		Admitted.						Died.				Discharged.		
From	To	Fevs.	Fluxes.	Pneumonia.	Dropsy.	Ophthalmia.	Ulcers.	Itch.	Fluxes.	Dropsy.	Pneumonia.	Ulcers.	Fevs.	
Aug. 24	Aug. 26		49	6	4	6	35	14	4					218
27	Sept. 2		18			12	13	23	10	1				
Sept. 3	9		15	2	4		3	12	9	1	2			
10	16		8						8		3			
17	23	7	6				10		7	1	2	1		
24	30		4			3	5		9	1	2		1	
Oct. 1	Oct. 7	1	4				2		2				1	
8	14		3	3			3		1					
15	21		4		1				1	1				
22	24	1		5			2		2					
Total		9	111	16	9	21	73	49	53	5	9	1	2	218

APPENDIX VIII.

List of Persons who have lately died in Basse Terre,
Guadaloupe, May 1st, to May 31st.

Names.	Age.	Disease.	Period in the Island.	Period ill.	Leading Symptoms of Disease.
MM ^{rs} . Didier.	23 ans.	Fievre Euro- péenne.	4 mois.	5 jours mort.	Vomisse- ment noir, hémor- rhagie na- zale et alvine. Vomisse- ment noir, hemor- rhagie na- zale. idem et idem. idem.
Huges.	25 ans.	idem.	4 idem.	6 idem mort.	
Mad ^{lle} . Denault.	11½ ans.	idem.	Créole.	6 jours mort.	
MM ^{rs} . Berville.	30 ans.	idem.	4 mois.	7 idem idem.	
Emar.	35 ans.	idem.	4 idem.	6½ jours mort.	Vomisse- ment noir.
Bernard.	20 ans.	idem.	4 idem.	7 jours mort.	
Blanchet.	30 ans.	idem.	2 mois.	7 jours mort.	
Goudrie.	24 ans.	idem.	2 mois.	2 jours mort.	
Sandré.	10 ans.	idem.	11 idem.	4 jours mort.	
Mad ^{lle} . Guenet.					

Mr. Lorient died in June at the three Rivers; he was just arrived from Europe. Three days illness; black vomiting. One Provençal dead three days ago of the same illness. Seventeen days illness. 12 June.

Signed,
"CHEROS."

APPENDIX IX.

List of Persons who have died in July 1816, Basse Terre, Guadaloupe.

Names.	Age.	Disease.	Period in the Island.	Period ill.	Leading Symptoms of Disease.
MM ^{rs} . Cantournet.	30 ans.	Fievre Euro-péenne.	un an.	6 jours.	Vomisse- ment noir, hémor- rhagie na- zale et alvine. } idem idem idem. } Vomisse- ment noir, seulement.
Nayent.	23 ans.	idem.	6 semaines.	60 heures.	
Thoret.	27 aus.	idem.	6 semaines.	4 jours.	

The above returns have been furnished by Mr. Cheros, a French surgeon, employed by the British government, in the colonial duties of the Port at Basse Terre, Guadaloupe. His opportunities of information were limited, his practice not being extensive; but his education is good, and he stated that he had himself seen all the cases detailed. He calls the fever that of the Europeans, the name commonly given to the yellow fever in Guadaloupe. His return for the month of June has been mislaid.

Signed,

W. FERGUSSON,

Inspector of Hospitals.

APPENDIX X.

Report from Assistant Surgeon RALPH, of the 2d, or Queen's Regiment, on the Difference of Health between the upper and lower Stories of the Barracks occupied by that Corps.

“ By a calculation made from the above Table, it appears that in the month of August, one case of fever presented itself in every *twentieth* man of those quartered on the *ground floor*, and in each *thirtieth* man of those on the *upper floor*. During that part of the month of September, which has elapsed, *each twenty-fourth* man was attacked with fever of those stationed in the upper rooms, and *each fourteenth* among those in the *lower*.”

Signed,

A. J. RALPH.

APPENDIX XI.

Comparative Sick Return of White Soldiers employed as Orderlies, in the General Hospital at Barbadoes, from the 25th of June, to the 24th of October, 1816.

Number of Orderlies employed during the period.	Number taken ill of fever.	Number who died of fever.	Proportion taken with fever of the number employed.	Proportion of deaths amongst the Orderlies.	Proportion taken with fever from the total strength amongst the troops in garrison.
198	7	2	as 1 to 28	as 1 to 99	as 1 to 5

N. B. It is ascertained that of the Orderlies discharged by their own desire, or for misconduct, none came back as patients. One of those returned as having died from fever, was a very drunken character.

Signed,

A. MENZIES,

Deputy Inspector of Hospitals.

APPENDIX XII.

Extracts from the Reports of Staff Surgeon LOINSWORTH, P. M. O. of Grenada, on the State of the 15th Regiment, on their arrival there from Martinique, dated 12th and 20th of September, 1816.

“ The 15th regiment have brought with them about seventy men as hospital patients, and nearly half the regiment as convalescents in barracks. I think I never saw a corps more dreadfully cut up from fever, I understand of the intermittent kind.

“ We still continue with a heavy sick list, and to judge from the appearances of the men of the 15th regiment, I apprehend it will be some time before they recover, or our numbers in hospital diminish. This day we have in hospital one hundred and forty-four of that number, ninety-eight are of the 15th regiment, independent of a numerous convalescent list in barracks; indeed so debilitated are the men, that the slightest exertion or fatigue brings on relapses of fever, and sends them into hospital. I have therefore thought it advisable to make a requisition for wine, as the expenditure for some time will probably be great.”

Signed,

F. A. LOINSWORTH.

REMARKS
ON THE
SPOTTED FEVER,
AS IT PREVAILED IN HARTFORD, CONNECTICUT,
IN THE YEAR 1809.

BY
DR. HENRY FISH,
Fellow of the Society.

Read the 3d of September, 1815.

THE subject of the following remarks, is a peculiar disease, which has been denominated Spotted Fever. It is described as it appeared in Hartford, Connecticut, in the winter and spring of 1809. The treatment is that which was adopted and found successful by the physicians most conversant with it; a treatment which has been approved and ultimately resorted to wherever this formidable malady has appeared. The facts related occurred to the writer's own observation, or were suggested by those, who were themselves eye witnesses. The name by which this disease has been known, is incorrect; because, strictly speaking, it is not a fever, and it is rarely attended with petechiæ, or spots. I shall use it, however, knowing no other by which to designate the complaint.

It is a popular name, and as far as I know, the one most generally used.

Before describing the *Spotted Fever*, it will be proper to notice the weather and diseases which immediately preceded it. I do not know that the former had any decided effect in exciting this epidemic; but there is a connexion between the weather and diseases, and it is only by long continued records of facts, relating to these points, that this connexion can be successfully and usefully unfolded. The winter of 1808-9 was unusually severe. The cold weather commenced earlier, and continued longer, than in the six or eight years preceding. The snow fell in December, in large quantities, and was not wholly removed until late in March. It was generally a foot or more in depth, and the air was intensely and uniformly cold. Snow storms were frequent and severe, without being succeeded by thaws.

The diseases of the summer and autumn of 1808, had been noticed as uncommon in two particulars: first, for the slight evacuations which were necessary to remove them; and secondly, for the comparatively large quantities of medicines necessary to produce these evacuations; whether they were to operate as emetics or cathartics. For two or three preceding years, it had been a common remark amongst the physicians of Hartford and its vicinity, that the diathesis of their diseases was changing; that instead of inflammatory diseases, which were almost universal, all, without exception,

had assumed more or less of a typhoid character. Hence, many who had been accustomed to bleed at regular periods, and who suffered when it was neglected, had omitted this evacuation with safety; or if they persisted in it, had found it injurious. Hence, too, purely inflammatory affections, both general and local, had become rare: indeed, they were scarcely met with. From this cause, too, it was, that injuries of the body from blows, &c. which, for years before, had been invariably followed by active inflammation, requiring, for its removal, free evacuations and cold applications, were in danger of becoming gangrenous, from passive inflammation, or a want of sufficient action in the vessels of the affected part, and required, for their cure, a liberal use of local and general stimulants.

Typhus fever, pneumonia typhodes and catarrh, preceded this epidemic, and were attended with the peculiarities already mentioned. The first of these prevailed more this season, and was attended with more debility, than is common. There were several cases of it immediately preceding the Spotted Fever; a number of which proved fatal in a shorter period than usual, under the ordinary treatment; and in these cases there was less morbid matter in the alimentary canal, and fewer evacuations were required, than in typhus, as it usually appears.

Pneumonia was not so common as it had been in cold seasons; and the cases of it, which occurred, were not so inflammatory as in other winters,

and under similar circumstances. Pneumonia typhodes was more common than usual, and attended with symptoms which showed extreme debility and proved the inflammation to be rather passive. In no instance was more than one bleeding required to remove it, and even that was generally unnecessary. An emetic and cathartic, at the commencement, with a free use of calomel, opium, and wine, in the latter stages, were relied on for the cure, and found effectual.

Catarrhs were not more prevalent than in former winters, and only deserve notice, as they were not so often attended with fever, and required only mild evacuations for their removal. With such precursors, this epidemic appeared: the first cases occurred the last week in January; after which it spread rapidly in different parts of the town. In the first instance, it assumed such symptoms as unequivocally marked the complaint to be Spotted Fever, and appeared totally unconnected with any other disease. These symptoms, as they appeared independent of the effect of medicine, will now be enumerated. Those which may be termed pathognomonic, as they serve to distinguish this from all other diseases, will be noticed hereafter. Although it was not difficult, in the first cases, to distinguish this from other diseases, yet it is not to be inferred, that the minor symptoms were in every case alike. On the contrary, they were very dissimilar; the characteristic marks of the disease, however, rarely varied. In the subsequent enumeration, I will ad-

here, as closely as the subject allows, to the course they followed in the majority of cases ; considerable deviations from this course will be noticed.

The Spotted Fever, with a few exceptions, attacked with a chill. The cold sensations were frequently first perceived at the stomach ; but in a few minutes they became general. They were often so intense, as to produce a shivering and chattering of the teeth, as in intermittent fever. In the cases where the chill was the most violent, the patients seldom complained of cold, even while they were shivering ; but the skin was always cool to the hand of a person in health. The duration of the chill varied in different persons and under different circumstances ; where no means were used to check it, it was rarely, if ever, followed by preternatural heat in any part of the system. Whenever flashes of heat succeeded the chill, they were very slight and transitory ; continuing but for a short time, and leaving the patient in extreme debility. The temperature of the body, during the chill, was always below the healthy standard ; the diminution of heat was perceptible in every part of the system ; the skin was cool, sometimes shrivelled, and in many cases, drier than in health.

The chill was, in most cases, accompanied with, or soon succeeded by, pungent and excruciating pain in some part of the body ; as in one of the extremities, the back, stomach or head. Sometimes sharp and agonizing pains were the first warnings of disease, attacking the head or extremities. Generally when it was first felt in a limb, it proceed-

ed along to the head. The spot complained of, as the seat of pain, was sometimes no larger than a cent; but it had no diseased appearance. These pains were scarcely ever described by the patients, as dull or heavy, but, sharp and lancinating; and in most cases moving from one part of the body to another. The bowels were exempted from pain. I do not remember a single instance where this part was complained of.

Pain was often complained of under the ensiform cartilage: on a closer examination, it was evidently not pain, but distress, having its seat in the stomach. This affection of the stomach is not easily described: patients themselves said they wanted words to express their feelings. Some called it a faintness; some a coldness; others a deadly feeling, of which they could give no distinct account. All agreed in representing it as very distressing; and where it had been removed, dreaded its return. This affection varied, in its duration, in different cases: in some it did not return after being removed, but generally continued, in some degree, through the disease; sometimes recurring at regular periods, or in paroxysms during the day, and bringing with it a countenance expressive of a degree of distress and horror that can scarcely be conceived.

The stomach was otherwise severely affected; nausea and vomiting were general, and in most cases violent. Generally, if no application had been made to check the chill, puking succeeded in a few hours; and nearly every case, in some of

its stages, was attended by vomiting. In a few instances, it was the first symptom that indicated disease, and in these, it was generally followed by a chill. The matter discharged from the stomach, in either instance, had no morbid appearance; nor differing in quantity or quality, from the matter ejected from a healthy stomach. There was no bile or mucus discharged by vomiting, whether it was spontaneous, or excited by art.

The respiration did not generally vary much from that in health; in some, during the chill, or when the pain was very severe, it was short and laborious; in others it was observed to be extremely quiet and placid. The respiration, in the later stages of the disease, will be noticed in its proper place.

The tongue varied much in its appearance, both on the attack and during the progress of the disease. In some violent cases, it was smooth, dry, pallid, shrivelled, and almost of a livid hue. When the tongue had this appearance, where the circulation was very imperfect, and great danger was justly apprehended, it obtained the expressive epithet *bloodless*. In other cases, it hardly varied from a healthy state, except in being dry; in some it was moist, but soon became dry. It never had on it any fur or mucus, as in our common typhus fever; but during the progress of the disease, it was covered with a dark coloured slimy matter, in some dry, in others moist; having the appearance of molasses. In some a black stripe ran longitudi-

nally upon the tongue, but never entirely covered it. Frequently it became dry and shrivelled, denoting a change for the worse. The bloodless tongue was almost always a fatal symptom. Patients sometimes lost the power of moving this organ in a few hours from the attack: the muscles attached to it appearing to be paralytic.

The pulse was always extremely weak, feeble and depressed: in most cases more frequent than in health; in others it was imperceptible on the attack, and for one or two hours, till it was restored by stimulants. There was not, before or after the chill, any increase of arterial action; on the contrary, where the disease was left to its own course, the pulse grew more and more feeble until death took place. In some instances, though rarely, it was observed that the pulse, in fulness and frequency, did not vary from a healthy state; but in all these it yielded to the slightest pressure. The pulsation of the carotid artery was sometimes perceptible at some distance; and though frequent and full, yet like the radial, yielded on slight pressure.

Two patients, the last winter, were bled: one furiously delirious, the other comatose: in neither of these did the blood present any uncommon appearance. There was no inflammatory buff, nor was it dissolved. In one case in 1807, where the eyes were suffused, it had a slight buffy appearance; in another, the following year, it was darker, and had a larger proportion of serum than usual. The two last mentioned cases proved fatal in a few hours af-

ter the patients were bled. Hæmorrhagies this winter were rare, although they were frequent in former epidemics. Epistaxes sometimes happened: in one case, there was a hæmorrhage from the fauces; the blood was discharged in small quantities, and during sleep. In another case, there was a hæmorrhage from the stomach, and the patient evidently sunk under the discharge. The strength of the patient, from the moment of attack, was completely prostrated. The debility of the muscles was astonishing, and formed a striking feature of the disease; for it took place without previous excitement, or debilitating evacuations. In some, a faintness and prostration were the first symptoms that excited the attention of the patient, who found himself unable to raise his hand, before he was sensible of being ill; in others, but very rarely, a lassitude or unwillingness to motion preceded the chill. In a few cases, where it commenced with a furious delirium, there was an apparent increase of strength in the muscles of voluntary motion; but this morbid excitement, in an hour or two, gave place to extreme weakness. In either case, the pulse was weak and feeble, and in some, where this morbid strength existed, it was fluttering.

The eyes were sometimes natural: generally they had a wild and vacant stare, sometimes accompanied with a glassy appearance, at others with a dilatation of the pupils. In some, where the attack was violent, the eyes were very brilliant, and there was a rapid transition from a complete dila-

tation to such a contraction, that the pupil was nearly obliterated. In some cases, this alternate contraction and dilatation continued for an hour or two, when it disappeared; being succeeded by a more natural state of the eye, or permanent dilatation, with coma. In many instances, the eyes were suffused with blood, and had every appearance of excessive inflammation: they were never yellow.

There were few, if any cases, where delirium, in some form or other, was not present in the course of the disease. It varied much in the time of its accession: in some, it commenced on the attack; in others, on the second, third or fourth day; generally continuing until convalescence or death followed; occasionally, however, intermitting for a day or two. When it ushered in the disease, the delirium was generally furious, or raving; the patient being completely distracted, and complaining of excruciating pain passing through his head. Not unfrequently, such patients were without sleep for a week, and obstinately refused food, or medicine. When delirium began at a later period, as it did in most cases, it was more mild, sometimes of a playful kind; the patient being sociable and humorous. There was a great variation in the feelings or spirits of many patients; sometimes being much elated, but more generally depressed.

In females, above seventeen years of age, the spotted fever often disguised itself under the form of hysteria; attacking with such symptoms as globus hystericus, crying or laughing, "without visi-

ble occasion," sighing, or wringing of the hands ; generally, these symptoms were accompanied by others, from which a diagnosis was not difficult. But when this variety first appeared, there were cases, in which the patients were supposed to have nothing but hysteria, until they had sunk beyond the reach of medicine. These patients, when delirious, were talkative and jocose : from their actions and expressions, they appeared to be completely happy ; and, though convinced that their cases were hopeless, showed no fear of death, nor any desire to recover ; some seemed resolved on dying from the first, and became impatient when attempts were made to encourage them with hopes of recovery. There was much variation in the continuance and degree of these symptoms ; generally when they were present, they began with the disease and continued through its progress. The state of the pulse did not vary from that in other cases, of equal violence.

In many cases of this epidemic, there was a peculiar affection of the urinary bladder—a difficulty and pain in discharging urine ; and it was seated in the neck of the bladder. There was a frequent disposition to void urine, when there was none collected ; or if the bladder was filled, emptying it gave exquisite pain. This might have been attributed to the operation of cantharides, had it not frequently occurred, where none had been used. In some cases, the secretion of urine was diminished, but without pain around the kidneys : in a few instances,

in which there were symptoms of hysteria; the urine at first, was paler than usual; in all others, it had a natural colour. The appetite was always impaired, especially on the attack and during the violence of the complaint; but, as soon as the patient had passed these stages, it returned, and the stomach recovered its digestive powers. It is believed, it did this in a shorter time than in most other diseases; for it was uncommon to find a patient oppressed by a full meal of animal food, even while they were unable to sit up.

That there was an irritable state of the stomach, and that the matter discharged had no morbid appearance, has already been noticed. The intestines were not disordered, except from torpor. They were not loaded with vitiated secretions of bile, or mucus: the evacuations were always natural, whether spontaneous or artificial. No morbid matter, whether bile, mucus, or indigested sordes, ever followed the operation of an emetic or cathartic, at the commencement or in the progress of any case of spotted fever. In a few cases, just before death, there was an involuntary evacuation of fæces.

The catamenia, if present on the attack, immediately ceased. This cessation was not followed with any of the usual symptoms of suppressed menstruation.

Some patients complained of a sore throat, which, on examination, presented the same appearance as in cynanche maligna, except the swelling of the tonsils. In some cases, the throat was ulcerated on

the attack: this part also, was sometimes first complained of; and when in this situation, there were ulcerations, the disease was violent, if not fatal.

In almost every case, the sense of feeling was greatly impaired, if not wholly lost. In some instances, a general numbness was the first symptom complained of; for, though the patient's skin was cool, yet he was insensible of a diminished temperature. The numbness was generally first felt in the extremities, though sometimes in the face. When the arm or leg was first affected, the patients would exclaim, "that they had none, or that they had lost it:" when the attack was in the face, they were constantly rubbing it: sometimes in the extremities, it amounted to a complete paralysis. In the face it was so severe and distressing, that they expressed their sensations by saying, "there was an iron mask drawn over it to the bone." The skin was often so insensible, that the most irritating applications produced no effect; cantharides, nitrate of silver, and the actual cautery were repeatedly applied in one case, without raising a blister or giving pain; in another, a pin ran under the nail of the great toe was not felt. It was always, as may readily be perceived from this statement, very difficult to excite a sweat, or preserve a moist skin, after it had been procured.

In a few instances, blindness was the first deviation from health, noticed by the patient or his friends, and this was generally followed by raving delirium. When the numbness was extreme, blind-

ness, with dilated pupils, sometimes succeeded in a few hours. In some cases, vision was restored in a few hours; in others, it was more or less impaired for several days; but it is not known that the sight was ever permanently injured by this disease. While the senses of feeling and seeing were thus totally lost or much impaired, that of taste was similarly affected; very hot liquids being always required to make any impression on the tongue. In some, this obtained to such an extent, that brandy could not be distinguished from water.

The hearing and smelling were natural. There have been instances, where patients when recovering, lost their hearing, without any perceptible injury about the ear.

There was often a melancholy tone in the voice on the attack, and during the progress of the disease.

The breath on the attack, generally, was not fœtid; but to this, there were some exceptions: in many cases, at some stage of the complaint, the breath was offensive, particularly during the coma; but had the fœtor of ordinary fevers.

Aphthæ were general, they were dark and heavy, spreading over the gums and fauces; in mild cases, of a whitish or lighter colour than in those which were more violent.

Deglutition was often much impaired; in the most violent cases, it was sometimes lost in a few hours: in some cases it appeared to be spasmodic,

but in most, it arose from the loss of power in the muscles attached to the pharynx.

In all fatal cases, the patients, before death, became comatose. Although the disease terminated in this manner, it is not to be understood, that coma was always a fatal symptom; on the contrary, many have recovered from this state, when apparently the powers of life were nearly extinguished. It was common for patients to be lethargic, and frequently difficult to rouse them. Some became comatose in a few hours from the attack; others not until the third, fourth, fifth or sixth day. The appearance of this symptom varied according to the violence of the attack and the remedies that had been employed. Before it began, the vomiting was incessant: whatever drinks were taken, were very soon rejected; the stronger stimulants, however, remaining on the stomach longer than the weaker. To this succeeded a strong disposition to sleep, with a slight rattling in the breathing: the difficulty of rousing them now increased fast, and they soon became insensible to the loudest noises, and all efforts to awaken them.

At this period, the eyes were closed, and of a glassy shining appearance. The pupil was often dilated, and insensible to the strongest light. If there had been any suffusion of blood in the eyes on the attack, it had now disappeared. Sometimes the skin was of a natural temperature, but more generally, it was below it, and not more moist than in health: in some places, as on the forehead or breast, it was

œdematous. The mouth, with one exception, was always open, and the gums and fauces loaded with dark coloured aphthæ, except in one case, and in that the tongue was moist, but pale and shrivelled. The respiration generally was short and laborious, with a rattling noise, or an apoplectic stertor: just before death, in a few cases, it did not vary materially from health.

Singultus was observed in some instances, but not generally. The pulse, at this stage, was always extremely weak and feeble, and sometimes quick: in some, it had the apparent fulness, that has been mentioned, but yielded on very slight pressure. In this state, the patient sometimes continued for six, eight, or twelve hours, when he expired without a struggle.

Petechiæ, or livid spots, from which the spotted fever has derived its name, did not occur in one case of this epidemic before death: after it, they were noticed in several. In 1807, when the spotted fever first appeared in Hartford, there were but few cases without them: in the following year, they were less common, and since then, they have not been seen in that place, before death. Their size, time of appearance and continuance, have been various; I have seen them as large as a dime, in twelve or fourteen hours from the attack, but generally, they were smaller—about the size of a half pea, and of a livid or deep black colour. They consisted of extravasated blood. I have seen some cases with petechiæ, and an eruption or efflores-

cence, resembling that of scarlatina; the red spots forming the eruption, receded on pressure, while the livid would not: they have also been frequently opened, when extravasated blood was discharged. The petechiæ appeared sometimes on the neck and breast, sometimes they were confined to the extremities, and in other cases, they were spread over the whole body.

The lymphatic and glandular systems were not particularly affected. Carbuncles were observed in a few patients, but not until they were convalescent: some were filled with a yellowish matter, while others disappeared without suppurating. In some of the towns around Hartford, where the spotted fever has prevailed, carbuncles and buboes in its first stages, have been frequent; and in Springfield, Massachusetts, there were several cases, with an eruption in the latter stages, similar to that of variola.

In some cases, where the attack was sudden and violent, the symptoms, at the expiration of twenty-four hours, were aggravated; and in one case, this exacerbation regularly returned till the patient was convalescent: it was then succeeded by a tickling sensation, which recurred at the same hour; beginning at the feet, and gradually extending to the head. One patient only had an inflammatory or painful affection of the joints, and that not till he had nearly recovered.

One patient, while ill with the spotted fever, was delivered of a healthy child, after a natural labour;

she recovered after a very severe affection, under the ordinary treatment.

The progress of the spotted fever has generally been very rapid : the disease always arriving at its height in one or two days ; and in some instances, in three hours. Such cases, however, were rare, patients generally surviving the attack from one to three days ; and there have been instances of their living ten or twelve days, and then sinking under the disease. In this epidemic, death took place, at different periods, between eighteen hours and seven days. There were no particular symptoms, which showed a crisis was about to take place, or which marked the period when convalescence began ; for some were evidently better in a few hours, and recovered very rapidly ; while in others, there was no material alteration for three, four, or five days, and in such, convalescence was generally slow.

DIAGNOSIS.

From this description of the Spotted Fever, it is evident, that there was some variety in its appearance, especially in some of the minor symptoms, and also in the manner of its attack. This has been the case wherever it has prevailed ; but in all the epidemics of this disease, there were symptoms or combinations of them, by which it might without difficulty, be distinguished from all other diseases.

These are, the intense cold, which was never succeeded by any permanent increase of heat ; the pungent and excruciating pain ; the entire prostra-

tion of strength, without previous excitement, or debilitating evacuations; the clean or dry, pallid and shrivelled tongue; the weak, feeble, and in some cases, imperceptible pulse, neither preceded nor followed by any increased action; the raving, or mild and playful delirium; the hysteria, independent of any usual cause; the impaired external senses; the exemption of the alimentary canal from disease; the profound coma and apoplectic stertor, all agree to distinguish this from other diseases, and mark it as hitherto unknown.

The cynanche maligna and typhus fever, are, I believe, the diseases most liable to be taken for it. In the first, a mistake might not be of great consequence, but in the latter, it might prove fatal to the patient. The temperature of the skin, the exemption of the tonsils from swelling, the absence of efflorescence, the numbness, the appearances of the tongue, and the healthy state of the alimentary canal, point out the difference between spotted fever and cynanche maligna.

There is little or no resemblance between spotted and typhus fevers, except in mild cases of the former; and in these, the character of the disease may easily be discovered by the pulse, the temperature, the appearance of the tongue, the impaired external senses, the excretions, the delirium, and the state of the skin.

In typhus, we have an increase of arterial action, a foul tongue, bitter taste in the mouth, and loss of appetite, clearly indicating a disordered stomach. The intestines also are deranged: the excretions

are altered in quality, or quantity; the temperature is increased and the skin hot and dry; in short, between almost every symptom of the two diseases, when they are carefully compared, there will be found a material difference.

CAUSES.

So little is known respecting the causes of Spotted Fever, that in treating of them, it will be impossible to follow the division usually made of the causes of disease, any further than as it relates to the proximate and remote; and even on these, I have but little to offer that is satisfactory. It is necessary, however, to speak of them, if it is only to acknowledge that the subject has hitherto eluded investigation: indeed, I do not know that any thing can be assigned as a proximate cause, which is adequate to the effect. Dissections have been made, but they have served only to point out the parts principally affected.

When the Spotted Fever first appeared in Hartford, persons of all ages, from sixty and upwards, were seized by it; yet, as children from two to ten years, the young under and about the age of puberty, women, and enfeebled constitutions, were more frequently attacked than strong robust adults, and those in full health, it appears that the remote causes are such as induce debility.

Among these, are fatigue, especially from watching, anxiety, intemperance, and the debilitating passions. Fear, and profuse evacuations, sometimes excited the Spotted Fever, and sometimes

predisposed the body to receive it by infection ; for there are facts which go to prove that it is infectious. It is not to be inferred, however, that all, or a greater part, of those who had this disease, received it by infection : on the contrary, many who were ill with it, were not, as is known, exposed to receive it in this manner. It is not known that the infection was ever preserved, or conveyed by bedding or clothes ; and there are many facts which warrant us to believe, that it is not more infectious than the common typhus, or autumnal fevers of our country. Whenever it has prevailed in Hartford, it has appeared in the same, or near that part of the city, where it did at first, and thence spread in different directions. There are many houses, in which it has appeared twice, and in some three times, with an interval of a year or six months between its visits. And while these families have been thus successively its subjects, neighbouring ones have been wholly exempt ; although there is nothing peculiar in the situation, habits of life, or diet, which can be supposed sufficient to produce this difference. Both in this, and in other places, a number of patients have recovered from a second attack. Negroes have not been exempted from this disease. The Spotted Fever has not confined itself to towns of a particular size or situation, nor to those which are considered as unhealthy. It has raged with the same violence and malignity in small villages, as in populous towns. There is nothing peculiar in Hartford and Litchfield counties, where it has extensively prevailed, which could be

imagined sufficient to produce it. Hartford has been as healthy, if not more so, than other places containing an equal number of inhabitants. And many of the towns in Litchfield county, which have been visited by it, occupy bleak and elevated ridges, equally noted for being the most healthy, as well as the coldest places in the state.

It has generally prevailed more in the winter and spring, than in other seasons; yet it has appeared, with nearly the same violence, every month in the year. The last cases of the epidemic have uniformly been more mild than the first; and in very warm seasons, a few of them have been slightly bilious.

It has been suggested, and I think with much probability, that the Spotted Fever is seated in the brain and nerves.

When the delirium, the coma, the state of the external senses, and the extreme prostration of strength, which constitute an essential part of this disease, are considered, this opinion is rendered probable; and it gains additional strength from the appearances of five dissections, as recorded in the Medical and Agricultural Register, for 1806. Unequal excitement of the brain, is said to be the cause of delirium; and coma, as appears from these dissections, arose from pressure upon the same organ. We call apoplexy and palsy, diseases of the brain and nervous system, from the effects produced on the senses, particularly from the loss of voluntary motion, and the sense of feeling. There are the same, if not more forcible reasons, for

placing this in the same class ; which, though not conclusive, almost establish the opinion which has been mentioned.

PROGNOSIS.

The danger in Spotted Fever, arose principally from the loss of action in the arterial system, and the inability of the stomach to retain the necessary medicines. The greater, therefore, the depression of the pulse, and the more obstinate the vomiting, or, if it had not already occurred, the greater the disposition to it, the more dangerous was the case. But a prognosis should not be formed from these alone : the other symptoms deserve attention, together with the probable effect, which medicine will have on the disease. If, therefore, the pulse be not much depressed ; if the muscles of the tongue and deglutition obey the will ; if the external senses be not much impaired ; if neither delirium nor vomiting have come on ; or, if the latter occur and be checked by stimuli, and the pulse and heat increase by their application ; if the throat be not sore, nor the tongue bloodless, it is probable, although the case be violent and obstinate, that the patient, with proper attendance, will recover. On the other hand, if the pulse be imperceptible, or appear full, and recede on the slightest pressure ; if the muscles of the tongue and deglutition be palsied, or contract with difficulty ; if the throat be sore, with much redness, the tongue shrivelled and pallid ; if the eyes be red and watery, with a quick transition from a full,

open, to a small, contracted pupil; if the patient express but little concern for his situation, and the senses be nearly lost; if the stronger stimuli have not conquered the vomiting, and the patient become stupid, and his respiration laborious and rattling, the event is certainly fearful, for the case will probably prove mortal. But, notwithstanding, if the symptoms threaten coma, or if it has already come on, our efforts should not be relaxed; they ought rather to be redoubled. While the lamp of life burns, although its flame be scarcely perceptible, no means, which can possibly prevent its extinction, ought to be neglected. By a constant and careful attention to the patient, by a vigorous perseverance in the use of medicine, by seizing every opportunity to introduce it, many have been raised almost from the grave, and restored to the world, their friends, and to health. "*Dum spirat, sperabo,*" on such occasions, should be our motto! In no disease can its observance be more useful, nor its effects more pleasing, than in Spotted Fever.

METHOD OF CURE.

The indication of cure in Spotted Fever, considering it as a disease of debility, is, to support the powers of life by diffusible and permanent stimuli. The prostration of the vital powers, is so extreme, that there is danger of the patient's life before reaction can take place; and as long as this prostration continues, he must be supported by stimuli, or life will be extinguished. If there be excess of action in the sanguiferous system

duced by venesection, before any other curative means are employed ; or, if the secretions of the alimentary canal be diseased, they should be removed by emetics and cathartics, before tonics, to brace the weakened fibre, are administered. But where neither of these objects are to be accomplished, no one will adopt the means for that end ; for their effects will always be injurious, and hurry the patient to his grave. With this indication, the physicians commenced the treatment of this disease, and were confirmed in the truth of it, by the success which followed their practice. The means, used to effect this intention, the proper quantity of medicine, and the time for its application, will now be pointed out. “ Unexceptionable rules cannot be introduced into the practice of physic ;” and as the spotted fever existed, like the scarlatina, from the most dreadful form, through all the intermediate grades, to one so mild, as to require but little assistance from art, it is impossible to give directions suited to the exigency of every case. The necessary doses of medicine, therefore, cannot be specified ; it must be determined by the physician, from the violence of the symptoms, and the progress the disease has made ; but the indication, already laid down, must, in a short time, be accomplished, or the patient will inevitably die. If mild stimuli will effect it, it is well ; if not, the stronger must be resorted to : some cases will require no more than warm aromatic teas, with a generous diet ; while in others, a very liberal use of the most diffusible

stimulants, will be indispensable to the recovery of the patient. I shall now state the practice that was found necessary in ordinary cases, and in adult patients, and the treatment for some particular symptoms.

The agents, chosen according to the indication, already laid down, to support the powers of life, and sustain the patient, until the violence of the disease had passed, were opium, arsenite of potash, ardent spirits, wine, hot teas, soup, epispastics, and the external application of heat. Heat was applied by fomentations, by billets of wood steeped in hot water, and by the other modes in common use. Its effects were found very useful, not only at the commencement, when these means were always used, but also, during the progress of the disease: they were renewed as often as the skin became cool, or they had given out their heat and lost their stimulating powers. It was always an object of much importance to produce a moist skin, or, if this could not be effected, to preserve a warm one, both of which, these applications assisted materially to procure. They could not, however, be fully obtained, without internal stimulants, given in large and frequent doses, and continuing them, until the heat and pulse were restored to a proper state. Of these, hot aromatic teas, opium and wine, or one of the ardent spirits, formed a part; the quantity of each being proportioned to the age of the patient, and the violence of the symptoms. It was only in the milder cases, that hot teas were allowed before more powerful stimuli had

then, it was necessary to add to them spirits, as well as opium. In more serious cases, from fifteen to thirty drops of laudanum, repeated in two or three hours, with a glass of wine or spirits, every hour or two, was a common prescription.

When vomiting had come on, wine, if administered, was generally rejected, and if persisted in, increased this dangerous symptom: in such cases, a more powerful stimulus was required, as brandy, clear or diluted, with or without spices, or, if more agreeable to the patient, gin or spirit. Sometimes hot liquors would remain on the stomach, when cold ones would have been rejected; and generally, when spirits were diluted, they were much more palatable, as well as really better, for being hot: at other times, the same effect was produced by the addition of spices. If the puking continued very violent, a blister over the stomach, or on the back opposite to it, operated very favourably, and was generally applied at this stage. In other cases, blisters applied to different parts of the body, produced very good effects, by increasing the excitement, and were freely used. Arsenite of potash, in doses of one or two drops, every hour or two, was administered especially, if the numbness was considerable, and in some instances of vomiting, which had not been checked by other means: in some cases, it was not ordered until a day or two from the attack, and in others, its use was not necessary. The quantity of this medicine was regulated by the state of the external senses; eight or ten drops, every second or third hour, being necessary for the

first doses, where they were most impaired; but afterwards, this quantity was reduced to two or three drops every hour. Soup also was ordered as soon as the patient could retain it; and in many cases, after the stimuli already mentioned, had been continued a number of hours, they took it in considerable quantities.

If, under the operation of the above remedies, the pulse became stronger; if the tongue lost its dry and pallid appearance; the skin became warm and moist; if the patient had been delirious, but was regaining his reason, he was then considered in a state of comparative safety. But it was necessary for his complete recovery, that he should be kept in this state, until the appetite was so far restored, that animal food with tonics could be introduced, in sufficient quantities, to preserve a proper action. To effect this, a regular course of the stimulants was ordered, suited in kind and quantity to the exigency of the case; diminishing them as the appetite and strength increased, and substituting in their place the more permanent, as the cinchona, colombo, or any of the vegetable astringents. Some time between the second and sixth day, if the medicines had produced the expected effect, by increasing the action of the system, it was necessary to open the bowels by a mild cathartic or an enema. In most cases, small doses of calomel were given on the second or third day; not with a view to evacuate the bowels immediately, but to prepare them to be opened by an enema. It was not attempted to open th_____

relief; for, during the violence of the disease, nothing could be removed from them which had any agency in producing, or which assisted in keeping up the diseased action: and this relief was called for, at an earlier period, where clysters of laudanum and brandy had been frequently used, than where their use had not been required. To effect this, an enema was preferable to a cathartic, for it induced less debility, and its operation was more under controul. It was generally administered after the calomel had been continued twelve or fourteen hours: it was not intended to procure more than one evacuation; and in some cases, so great a prostration followed this, that the patient was with much difficulty recovered from it. When this took place, large injections of laudanum and brandy, or laudanum and soup were resorted to; as well to check the discharge from the bowels, as to increase the action of the system, for which additional stimulants became necessary. When the clysters were continued for a number of days, the intestines were evacuated once in twenty-four or forty-eight hours; but when stimuli, in sufficient quantities, could be introduced into the stomach, an evacuation, unless some particular reason required it, was not necessary more than once in three or four days. The diffusible stimuli were always cautiously and very gradually withdrawn, and only where the more permanent could be substituted in their place. About the fourth or fifth day, or at an earlier period, if the stomach would retain it, cinchona was given in as large doses as the patient could bear; and at this

period, wine was generally sufficient, with the tonics, to preserve a proper action, and was continued until the debility, consequent to the disease, was removed, and the patient could resume his usual mode of life. If coma had come on, a fatal termination was only prevented by increasing the quantity of stimuli, and by seizing every opportunity to introduce them. As during this state, no medicine could be given by the stomach, large and repeated injections of laudanum and brandy, or soup, sometimes raised the patient from a comatose state, and enabled him to receive stimuli by the stomach, so as to prevent the return of this formidable symptom. The application of epispastics, and volatile medicines thrown in the nostrils, have had the same effect. There have been instances, where an emetic, which operated very quickly, produced the same result. Attempts have been made to rouse the patient by injections of turpentine and copaiva, and in a few instances, with success; but more generally the bowels were so torpid, that even six or eight ounces proved useless. Venesection gave no relief.

Therefore, when called to a patient recently attacked with spotted fever, our object is to raise the excitement by the use of external and internal stimulants. If the attack be moderate, mild ones will answer at first, and probably through the course the disease; if it be violent, the more powerful must be used: at any rate, let enough of such as are proper be administered. To increase the ex-

citement, and procure a warm, moist skin, let the patient be put in a warm bed, let heat be applied and continued till the object is gained. At the same time, some internal stimulants must be given, conjoined with opium, which, in all cases, will be indispensable ; especially if there be great pain or raving delirium, when it should be repeated at short intervals until the senses be restored. Let the stimulant that is used, be repeated at proper intervals, and increased if the symptoms do not soon yield. On this circumstance, in a great degree, depends the succeeding treatment : if they do yield ; if a warm and moist skin be produced, and if the pulse increase in strength, it is probable the case will require only mild treatment, and the weaker stimuli will be sufficient.

But, if the symptoms do not yield ; if the heat be not restored, nor the pulse increased in energy ; if the medicines be ejected from the stomach, let the stronger stimuli be resorted to, or the mode of administering those already used, be changed. When laudanum does not agree with the stomach, from some peculiarity in the constitution, let it be given by injections, with brandy or soup. If wine sours on the stomach, and increases the vomiting, let one of the ardent spirits be used, or the acidity corrected by some alkali ; apply an epispastic to the back or over the stomach ; let the medicines be given in smaller and more frequent doses ; let the arsenite of potash be administered in small quantities ; especially if the heat be not restored, or after

having been restored, it has again receded. In some cases, much benefit will be derived from changing the stimuli, although they be of equal strength ; let the patient have constant and careful attention ; let all means, that afford a prospect of success to check the vomiting, be used ; for unless this be soon stopped, coma will succeed, when access to the stomach being cut off, there will be much less prospect of removing the disease. But, if coma has come on, we should not despair. Let the number of blisters be increased, as well as the external applications of heat ; let there be large and frequent injections of laudanum and soup, or soup administered, and some of the methods of rousing a patient already mentioned be tried. But we will suppose, that the medicines have had their intended effect, and more favourable prospects present. The small doses of mercury should now be assisted by a laxative injection and the patient supported under its operation ; milder stimulants with tonics will enable us to hold the advantages gained ; the former should be cautiously diminished and the latter gradually increased as convalescence progresses. Let these be assisted by generous diet and proper cordials until health be completely re-established. Under such a course, this end will probably soon be gained ; for, to such treatment, and to such only, has this disease yielded.

OBSERVATIONS
ON THE
REMITTENT FEVER,
AND ON
THE PLAGUE
WHICH PREVAILED IN THE ISLAND OF CORFÚ
DURING 1815 AND 1816.
BY WILLIAM GOODISON, M. D.
ASSISTANT SURGEON, 75th REGIMENT.

ADVERTISEMENT.

THE following letters, although manifestly not written with a view to publication, appeared to the Editors to contain so much valuable matter, that they obtained the permission of Mr. Crampton, the Surgeon General, to whom they were addressed, to lay them before the profession.

Original observations, illustrative of the nature of pestilential contagion, must always be possessed of considerable interest; but their value is materially enhanced when, as in the present instance, they are made without a view to the support of any peculiar opinions.

*Extract of a Letter, dated Corfù, December
26th, 1815.*

I have had a good deal to do since my arrival here, a severe fever having prevailed in the regiment during the whole of the hot weather, which I have had to encounter myself, with only the occasional assistance of an hospital mate : it was the bilious remittent, attended in many instances with a deep yellowness of the skin, and in a few severe cases, with great irritability of stomach, and, in my opinion, differing only in degree from the yellow fever.

In most instances I found decided advantage from opening the temporal artery, more than the depletion, merely as such, would seem to afford ; where the headach is severe, the eyes brilliant, and the countenance flushed, it cuts the disease short at once. An universal symptom, which the men described as a stunning and dizziness of the head, prevailed, which also derived generally decided advantage from the same remedy. This affection, when amounting to fainting upon sitting or standing up, was, as you may suppose, a very alarming symptom. I opened the bodies of eight out of twelve (I think) that died ; the number of cases of fever of all descriptions, during the summer, amounting to between 210 and 220. In all I found the gall bladder distended with bile, the quantity amounting in two cases to two ounces ; and in the others, varying from one ounce to $1\frac{1}{2}$ ounces ; it was black and

ropy, but made a beautiful yellow when lowered down with water. No gall stones or other obstruction in the biliary ducts. The large intestines were in some places much contracted, in others considerably dilated, and some distended with air. There were always traces of inflammation to a greater or less extent in the brain; in some, water in the ventricles; in some, the vessels of the pia mater were turgid with red blood; in most cases, in three at least, that I recollect, there was an effusion of coagulable lymph directly under the vertex of the skull to the extent of a Spanish dollar. There are no marshes sufficiently near to assign as the source of this complaint, and although we had some bad cases, among such as had been on guard in the neighbourhood of ditches containing stagnating sea water, yet they were not altogether confined to sources where the causes were so evident and ascertainable; in many cases, it must have originated in the heat of the weather (the thermometer standing generally at 84° .) merely or conjointly with a peculiarity of soil. When light rains occurred during the heat, we were sure to have bad cases immediately after. Since the cold weather it has changed gradually into the intermittent form, of which many cases have been very severe and obstinate. Bark, although it has been greatly decried in these countries, from its being found not to come up in infallibility to the expectations of some enthusiasts is yet an excellent medicine in the purely intermittent form, and will cure two thirds of the cases to a certainty, but is never used in the remittents of these countries,

from the certain conviction of its doing harm ; in the latter, bleeding from the temporal artery, purgatives, and the James's powder, were active and useful remedies, when employed with judgment and discrimination. In cases of irritability of stomach, the effervescing mixture and tincture of opium, the latter was particularly useful, joined with the tepid ablution at bed time, when the heat of the skin required it, and the state of the stomach forbade the use of antimonials. I think calomel did mischief by encreasing the action of the liver, and, as I suspect, producing tympanites, for which I could assign no other cause. I fear I have dwelt too long upon this subject, without offering you any thing new or interesting ;—however, since writing the above account, I am sorry to inform you that there are grounds to suspect that the plague has made its appearance in this island, and about fifteen miles from this town. We are all upon the alert, and have formed a cordon of light troops about the villages where it has been discovered, so that, if the fomites have not been already disseminated amongst us, we shall, please God, escape ; and there is every reason to hope that we shall be able to circumscribe this horrible evil, and confine it to the source from which it is believed to have sprung. The first village where it appeared contained about 52 or 53 inhabitants (a colony of Albanians) of whom 30 were taken ill, and four only survived. The town has been burned with every thing in it, and the few remaining inhabitants supplied with every necessary and comfort, but kept under strict quarantine. I do not like to

call it by so horrible a name, but certainly there are strong suspicions that it is the same.

*Extract of a Letter dated Leftimo, Island of
Corfù, July 2d. 1816.*

If the following detail of facts, which came under my own observation, and that of my friends engaged in the same duty, afford you any satisfaction, I shall be content.

I was ordered down here on the 12th of March, and took charge of one half the infected district, called Lower Leftimo, then under Deputy Inspector Tully, who superintended the whole; I had only an opportunity of seeing about twenty cases, as in the scattered population of this district I was obliged to assign a great deal of the medical inspection to a native doctor; our duty was to separate the infected, and have them sent to the Lazaretto, and the suspected to a camp constructed for the purpose, and admirably arranged by General Phillips.

The disease was at its height about the time of my arrival, but soon began to feel the effects of the order established upon this plan; it declined rapidly afterwards, and the last accident occurred upon the 6th of May, ten days having intervened between it and the one which preceded it, free from plague. As to the origin of the disease, the fact is not sa-

tisfactorily ascertained ; it existed about twenty days before the government got information, and about thirty persons had died ; they were supposed to have died of the stripes and strangulations inflicted by the *spirit* of a man who had been murdered in the village of Maratheá, where first it appeared ; under this impression the inhabitants collected all the priests of the neighbouring villages to aid in appeasing and laying the angry ghost ; a convocation of Papas (as the Greeks call them) was accordingly held ; several ridiculous ceremonies used, amongst others the digging up of some of the bodies, putrefying and in their infected cloths, (the custom of the country being to bury them so) and solemn mass was performed amid a crowded congregation. Another act of superstitious infatuation had nearly involved the city in the same calamity, a close narrow-laned dirty town containing about 18,000 inhabitants. They actually sent pieces of the clothing of the infected bodies to be nailed upon the coffin of the tutelar Saint, Spiridion, who among many other miracles, has preserved the city at least, from the contagion. The breaking up of the convocation was followed by the dissemination of the disease through the persons of the Papas in all the surrounding villages, to the number of ten or twelve, the population of which varies from 1 to 7 or 800 each, scattered over a district of about twelve or fourteen miles ; after this a cordon was formed against the infected district, which proved effectual in protecting the city, with the aid of St. Spiridion. Deputy Inspector Tully came down with an hospital assistant,

and attacked the enemy at his first point, Marathea, but they soon found that he was too many for them, having had the start of them long before.

Poor — the hospital assistant, fell an early victim to his own inexperience. Only nine of the people of Marathea, remain out of 45, its original number ; and it continued to break out in the other villages from time to time, till at last the number of deaths amounted to eleven of a day, no inconsiderable mortality for the small population. The gross amount of deaths, as well as could be collected, was stated, in the Gazette of the 11th May, at 414, and about 60 counted convalescent ; but I have reason to believe that only one recovered out of every fifteen attacked with real plague.

The character of the disease, when I saw it, was marked by the following symptoms, set down in their order of succession : previous costiveness and whiteness of the tongue ; nausea ; a dirty sallow complexion ; slight irregular rigors, sometimes, but rarely amounting to severe shiverings ; vomiting, with uncommon anxiety and irritability of stomach ; tongue permanently white, and loaded with white curdy matter at the root, generally a triangular patch in the middle, of a florid colour, the base of the triangle at the apex of the tongue, and two white stripes occupying the remainder of the upper surface ; the edges remarkably red ; the countenance sallow, indicating fear and anxiety, with a horrible expression of despair, particularly when the patient was aware of his awful situation ; staggering came on the first evening, if the patient was attacked in the

morning, and formed a decided feature of the disease upon the morning of the second day. This symptom, or total inability to keep the legs, was quite sufficient for the diagnosis, although the rest were wanting. This staggering is not like the effects of weakness in remittent or other fevers, where the patient falls doubled up like a sack ; in plague he is capable of making an effort with his limbs to keep himself erect ;—nor do I think in plague it is so often attended with syncope ; in fact it is the staggering of a drunken man ; and many were reported to be drunk, who were actually plagued. When brought to the full light at the door, he probably collects sufficient strength to strip himself, aided by one or two of the family ; he sinks under the exertion, the light too overpowers him, he rolls his glistening eyes and staggers off. Generally the bubo or carbuncle has been now discovered, or the purple petechiæ, that evening (the second day), and he dies the following morning, or before the next night. This was the usual progress. I am unacquainted wholly with the particular appearances after the second day, from personal observation, as our duty in the villages was to send the infected off to the Lazaretto instantly. They sometimes died delirious, sometimes comatose ; at the commencement, a frantic delirium generally terminated their life and their miseries together, the bubo being attended with a dreadful succession of convulsive paroxysms : The buboes were sometimes large, and sometimes numerous. Upon one old woman I saw five, livid at the top and fiery at the base ; the carbuncle

was of the same character, and attended with rapid sloughing, or rather mortification. I have seen the petechiæ just as if you had taken a pen full of ink, and filliped it against the body, so black and well defined were they. So far the diagnosis of the disease is easy, but the symptoms are not always thus clearly marked. I have seen two medical men, and a third, a man of great experience, though not a professional man, pronounce upon one of the last cases, that it was not plague. The following morning the man, who was an expurgator, had a bubo, and died upon the third day. He had been employed in the most dangerous offices from the beginning with impunity, in carrying the infected and burying the dead.

The anomalies were frequent and various. A man came to a friend of mine to have his tooth drawn, with toothach and swelled face. The swelling was a parotid, and he died the third day. In another the first symptom was pain in the occiput; the disease, too, frequently set in with pains resembling rheumatism. One of the most extraordinary facts was the existence of bubo, although the constitution was but little disturbed: of two men who were so little indisposed as to converse with me long and freely, upon the cause of their complaint, and calmly to point out the persons with whom they had had any communication; one had at the time an axillary, and the other an inguinal bubo: both were dead in forty-eight hours. Many similar cases occurred to other medical officers. Poor — was, I am

told, first attacked suddenly with pain in his groin, after resisting the contagion for a long time.

These facts appear to me to argue strongly against the opinion, which savours so much of the humoral pathology, that bubo is an attempt at a salutary and critical discharge. That nature should take up the alarm so very quickly, (as it is expressed) before she feels the effects of the original impressions, is making her provident indeed, and to very little purpose, as the worst symptoms usually follow the complete formation of the bubo; it is in effect making her a perfect suicide, which our visionary theorists never stick at.

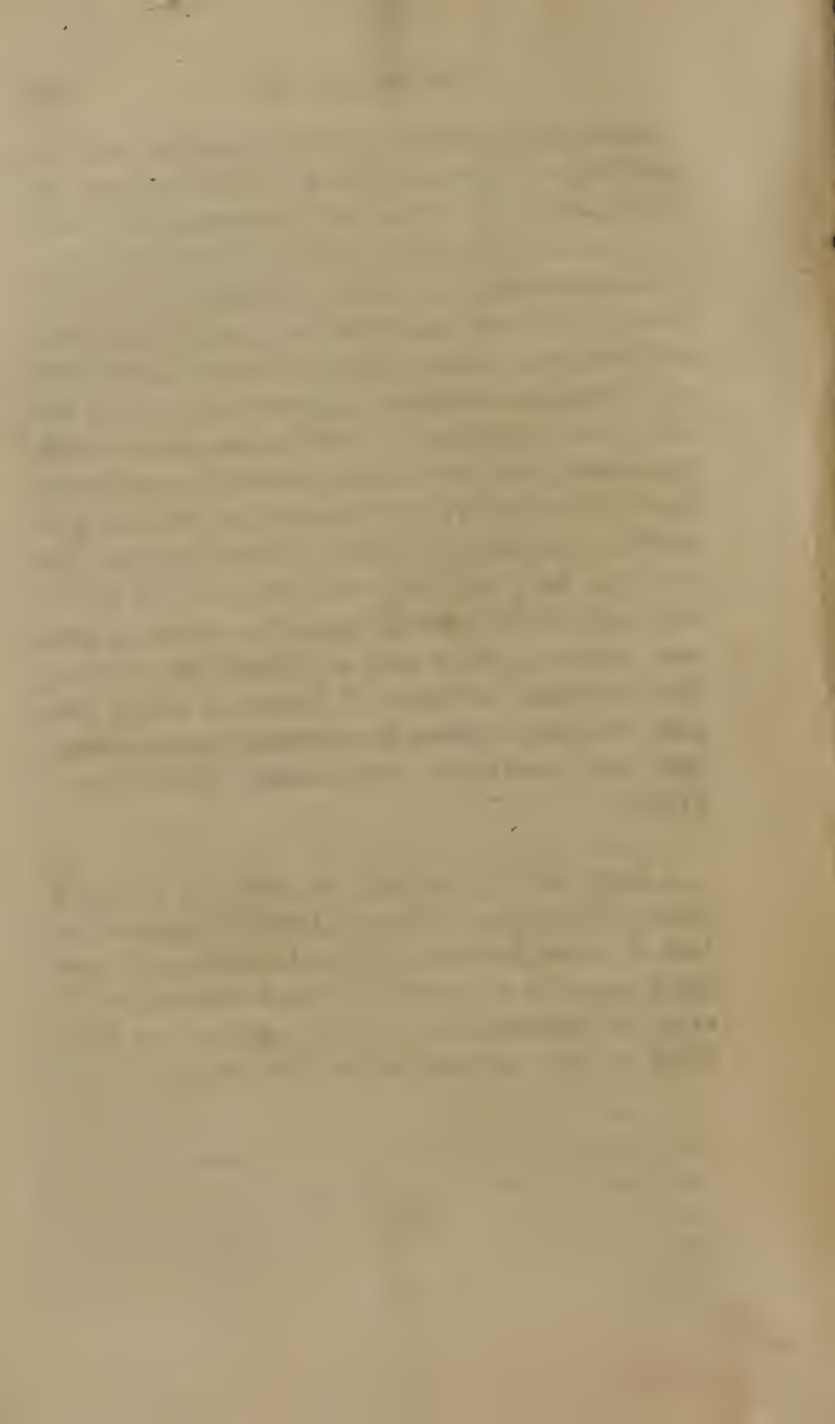
Another extraordinary fact was the almost total suspension of all other acute diseases during the period, in a country where every change of season brings a train of diseases more or less fatal. Tully, who knew what was passing in the whole district, observed the same circumstance; and it is singular, that the only exception to this, was three cases of gout occurring in Lower Leftimo, and two of the same at the camp, and this notwithstanding the hardship and privations to which all were exposed, being mostly under canvass at a season of such continued rain between the equinoxes, that the occurrence of two successive fair days might be deemed a phenomenon, yet in the city and beyond the cordon, inflammatory diseases occurred in the usual proportion.

With respect to the contagion, the following facts may not be uninteresting. A woman was taken ill within a month of her time; she was delivered in two days, after which she only survived three. She had no symptoms or mark of plague upon her body; however I judged it prudent to send the family, consisting of six persons, including the infant, to the camp, to be placed in observation; after six days a thrifty old lady of the family, having got herself settled, took a handful of cotton to spin; she had no sooner set to, than she was taken ill with vomiting; a young man was also infected before night, and the whole six were exterminated in a week, with five other persons in an adjoining building, who had had communication with them. I traced the contagion in two instances to pack-saddles which were infected. In one of these cases the father, who used the saddle, escaped; but his son, a boy about nine years of age, caught the infection, and died in three days. The mother, who carried the boy to the camp in her arms, a distance of six miles, left her house in perfect health, was attacked the following day, and died in thirty hours with petechiæ, carbuncle, and bubo. I think we are but ill acquainted with the limits of the operation of contagion and the laws of susceptibility. Most extraordinary and unaccountable instances occurred, where the greatest caution, excited by the greatest terror, could not shield the unfortunate victims of this horrible disease; of course the infection was conveyed, in all these instances, by contact, which, in the ever multiplying sources of danger, unexpectedly took place; yet of 300 Alba-

nese soldiers, employed in guarding the infected, following the track of contagion hourly, patrolling the streets at night, and, above all, guarding the expurgators in their various offices, we lost but two, a captain and his servant. Yet they could not take any precaution about their shoes and clothes. In many families in this quarter the mortality was deplorable, fifteen dying out of sixteen infected, at the lowest calculation: this was, however, owing in some measure to the remoteness of the Lazaretto, which was six miles off. With respect to the introduction of the disease, I am firmly persuaded that it was imported, although I know many believe it to be indigenous, and they have some strong reasons to support this opinion. First, they say we cannot trace out the fact of its introduction, notwithstanding the offer of a large reward. Secondly, that the district has been always remarkably unhealthy, and twice had medical officers been sent down two successive autumns, to ascertain the nature of a suspicious epidemic. Thirdly, the character of the disease varying so much; at first it appeared in the form of cynanche maligna, nor did parotids appear until some time after this period, and buboes much later, accompanied by convulsions and sudden deaths. The period of the disease also varied; at first it extended to five and seven days, latterly three days was the mean duration. Most of the patients I saw died in forty-eight hours, and there is reason to believe that some were cut off in twelve hours.

In answer to all these : First, the whole nearly of the village of Marathea, where it broke out, was destroyed, certainly all that could know any thing about it. Secondly, the exemption of all the other parts of the island outside the cordon, (although subject to all the circumstances assumed as the cause of the disease at Marathea, viz. bad air, the consequent generation of a contagious distemper, aggravated by poverty and every sort of privation). Add to this, that although the district had been always unhealthy, no disease, known there before, approximated to this in its proportion of mortality (*ab initio*) to convalescence. The ratio was nearly inverted, one death occurring in sixteen cases of the severest remittents, during a summer ; whereas fifteen died of plague, for every one that recovered. Thirdly, I believe it always happens that plague makes its appearance in an ambiguous form, and shifts and changes about like a Proteus.

I know not what apology to make for this long string of facts and opinions, all jumbled together, but that if I had had more leisure I should have been more attentive to order. I was determined, however, to dispatch them even so, and just set them down as they occurred in my note-book.



with the respects
J. Brickner

CHARLESTON MEDICAL JOURNAL AND REVIEW.

VOL. XV.] CHARLESTON, S. C., JAN., 1860. [No. 1.

ART. I.—*The Yellow Fever of Charleston, considered in its relations to the West India commerce.* By WILLIAM HUME, M.D., Professor of Experimental Science in the State Military Academy of South-Carolina.

It must be obvious to every reader, who follows the arguments of the various writers on the origin of yellow fever in our city, that the object of one party is to protect the citizens at any pecuniary cost, from the ravages of pestilence, while the other is interested in the protection of a particular commerce, which is believed to be more beneficial to the city, than the preservation of our sojourning foreign population. It seems to be conceded by one party, that the importation of one thousand hogsheads of sugar and molasses, advances the prosperity of the city more than the immigration of one thousand Irish and German candidates for permanent citizenship, while the opposition party believe that an increase of our population from any source, is a permanent increase in our means of fixing wealth, and that the income from an emigrant's labor, remains and accumulates, so long as he lives, and also survives in the labor of his children. Opinion is divided between the receipt of an annual income from commerce, and a permanent capital from population, for, in the present state of our knowledge, derived from the experience of the past, an increase of population is incompatible with the occasional prevalence of a mortal pestilence. It operates in two modes. It destroys those

who settle, and deters others from settling. The ignorant, the destitute, or the desperate, alone will risk our climate, while the more desirable and useful will settle other and safer regions. Thus Charleston suffers both in the quantity and quality of its emigrant population. Capitalists and foreign merchants avoid us, while petty German traders and Irish laborers supply their places. Our pride and prejudices are excited against them, and it is not uncommon for a native to rejoice at the advent of fever, because he knows that the evil is to be diminished by the funerals of many. These intemperate expressions are occasionally rebuked by the death of a favorite native, or presumed climatized citizen, when all parties unite in one general conviction of the extent of our calamity, propose the employment of energetic means for its future prevention, agree upon the necessity of the most complete sanitary measures to prevent its propagation, and the most rigid quarantine to prohibit its introduction. The winter returns, the disease is arrested, business is resumed, and the visitation of the last season is forgotten. The summer again returns, and finds the parties again divided; one maintaining the domestic origin of the disease, and the sole propriety of cleaning, draining, ventilation, &c., as the only means required for its prevention, the other party concurring in the benefits of these precautionary measures, desires to add the rigid quarantine to make "assurance doubly sure." The claims of commerce are interposed. It is made to appear that the commercial wealth of the city is concentrated in the yellow fever ports; that all the cotton and rice on hand will remain unsold, and the cargoes required for old Spain will remain on our hands. Spain and her colonies thus become magnified into the whole world, and we are urged to believe, that we must trade with Spain, under the contingency of importing a pestilential disease, or lose the trade of the world. We have no objection to trade with the Spanish colonies for nine months in each year, and do all that we have to do, but we cannot consent to trade with any country on such dangerous terms as the other three months necessitate; and if this principle was fully carried

out, we would avoid a danger which is believed by some, suspected by many, and denied and ignored by a few. The odious humbug of quarantine would be useless, the attempts to avoid its provisions would be unnecessary, the hopeless endeavors of the hygienists would cease to annoy the community, and the citizens would then be convinced that our past misfortunes have proceeded from our own avarice, and not as a retribution for our other manifold sins. Cleanliness and adequate drainage are essential to the amelioration of our indigenous and local diseases; and in whatever climate cities may be built, and in whatever locality, a large population may be collected, there must drainage, sewerage, and scavengers work be done, as a common preventive to every disease that moisture, and bad air produce or propagate, commencing with the fashionable cold, and ending with the prolonged typhus.

It is obvious that the only true and certain mode of relieving our city from the occasional visitation of yellow fever, is to prohibit promiscuous and careless intercourse for three months with presumed infected cities. If a single case of such introduction and subsequent propagation is established beyond a doubt, we may have strong suspicions that it can be done again, and has been done before. If it can be shown that the eight epidemics which have appeared in Charleston since 1838, have been traced to Cuban commerce, introducing into our city persons already sick of the disease, or taken sick soon after arrival, it is clear that the disease can be, and has been transported from an infected city to a sound city; or if it can be shown that during the healthy summers no such case has been introduced, and this particular disease has not prevailed, then we are justified in our position that a subsequent propagation does not, and cannot occur, without a preceding importation. The effect is absent, because the cause is absent. The native counterfeit, the so-called sporadic cases never assume an epidemic number, are never traceable to a foreign influence, nor are they propagative.

The proposition of a three months suspension of the West

India trade will fall harshly upon the commercial ear, and a greater clamor may be expected than has ever fallen upon the ill-fated Quarantine. Nevertheless, desperate means must be opposed to avert imminent dangers. The facility of evading the most carefully prepared regulations, the unseen, and stealthy manner of introduction, the unknown escape of a dangerous subject, and the rather prolonged incubation of the disease in an individual who has undergone the detention demanded by the present law, possibly in an infected ship, are so many reasons to doubt the certainty and security of the present system. It is satisfactory to know that each year of Quarantine adds to our knowledge, and that an amount of positive information may be hereafter obtained adequate to remove all defects and secure a system capable of protecting our city. The last summer's observation developed some important facts. Namely, that the cook Tynen could secrete himself on board the steamer plying between the city and the Catawba, escape the vigilance of the police for many days and remain well all the season. That Garcini and Scharwacter did remain on board of the Catawba for the allotted period of eight days, were lawfully discharged, took the fever three or four days after their entrance into the city and died. Thus want of vigilance was manifest in the escape of Tynen, and although we have no reason to apprehend that any injury was done to the health of the city by his entrance into it, yet another escape of a better subject for fever might not have been attended with the same happy result. The lawful discharge of Garcini, and his arrival into the city before his period of incubation had terminated, was a far greater misfortune than the escape of Tynen. In the latter case, the framers of the law erred in the presumed time of incubation, and notwithstanding great efforts were made at the time to obtain twenty one days, the majority prevailed and eight days was voted to be sufficient. The case of Garcini and others show that the period of incubation exceeds eight days, yet the law remains unamended, and other Garcinis and Scharwacters may renew the calamities of 1858 in other years. By a curious concurrence, Tynen and Garcini put up

at the same house, and in this house was reported the first case of yellow fever in 1858. Abbot and Tynen occupied the same room, and were together for twelve days before Abbot sickened. Garcini and Abbot were adjacent and visited each other for two days before the illness of Abbot, and other two days before the illness of Garcini. On the evening of the 12th, Garcini was removed from the room of Abbot to bed from which he never arose, for he died on the 15th, 4 A. M. The discovery of yellow fever in a house in which two men recently from Havana where domiciled, was sufficient, to awaken the suspicions of the community, and to refer the origin to direct importation. The contagionists were elated, but the non-contagionists were equally sanguine on the discovery, that an old cellar had been deepened, and converted into a cistern, that the earth had been deposited under Garcini's window, and that a privy had been removed, and the old sink filled up with earth, and boards laid over the whole. Here was a local cause adequate, in their estimation, to produce the whole effect, and the illness of Abbot and Garcini was referred to this local cause rather than the infected city of Havana from whence Garcini had returned four days before. In the absence of positive proof each party must enjoy their own conclusions. Garcini had yellow fever, of which he died. Garcini had just arrived from an infected city, Garcini was exposed to the malaria of the excavated cellar and removed privy, hence Garcini was bound to die from one or the other cause, according to the opinions of the contending parties. But Tynen was equally exposed to both causes. He had also returned from Havana, and he had been exposed to the malaria of the cellar, &c. and was proof against both. He still lives. If we now trace out Scharwacter, the companion of both, we find him at his brothers, No. 18 King street, where no cellar had been excavated, and where no privy had been removed, yet Scharwacter proclaims himself to be unwell, on the 10th, returns to the Catawba, is sent to the Lazaretto, a case of yellow fever, and dies on the 16th. Now it is certain that no similar local cause had an action on Scharwacter, as that alleged against Garcini. Yet both died

of the same disease, and about the same time. It is evident that the only cause of yellow fever, that was common to both, was the visit to Havana, and if both were susceptible of the poisonous influence of that locality, there is nothing new, nor wonderful in the fact of the disease, and death.

The febrile transactions in Tradd street became more complicated by the illness, and death of Abbot, who made no voyage to the Havana, yet suffered the evils of such a voyage. It is alleged that Abbot died of yellow fever, which is not denied, but is it proved that Abbot's disease commenced as yellow fever? May it not have been a conversion of type, from an ordinary fever? under the influence of Garcini's presence. Similar conversions of type are common, during the prevalence of yellow fever; a case of common remittent fever, becomes a case of yellow fever in a day or two, as has been often observed in our Hospitals. In fact the conversion is so complete, that it is impossible to distinguish the convert from the original, except by reference to the previous history. Sailors from Georgetown, Savannah, and Wilmington, with the respective fevers of those localities, have been admitted into the Marine Hospital, and have died of yellow fever within four days. Now it would have been a grave error to have attributed the origin of yellow fever to those localities. They are clearly conversions of type, under the influence of the more powerful disease, which is present in the building. Such conversions do not occur when the yellow fever is absent. Such fevers pursue their natural course, and end as they would have done in Georgetown, Savannah or at Wilmington, and in the same manner as if they had not been removed. The principles contained in these observations apply to Abbot, as correctly as they do to the sailors in the Marine Hospital. There is nothing wonderful in the fact, that a policeman should have a fever. Such things are common. There is nothing wonderful in the fact that the disease should assume the appearance of yellow fever. Such things are also common. There is nothing wonderful in the fact that he should die of yellow fever three days after another man had died of the same

disease within ten feet of him. Such things have happened before. In 1856 Diola was brought to the Marine Hospital with yellow fever, on the 2nd of August, first case. Nelson was confined to his bed with a broken leg in the opposite room about 14 feet distant. On the 5th Nelson took the disease and died on the 10th. That Diola was the cause of Nelson's disease, there can be no question, for Nelson had not been out of his bed for four months.

The same influences were produced on the 2nd story shortly after. Pettighon, the 2nd case, infected Hansler, and Hansler infected his nurse. Now if these infections can occur in a public Hospital, and become parts of the history of the disease, where is the impropriety of explaining similar occurrences, when they happen in a private dwelling on the same principles? If Diola could infect Nelson, free from any fever as he was, and of course less susceptible of the disease, from an adjacent chamber, why could not Garcini have the same influence on Abbot, who was suffering under some kind of fever? and of course more easily influenced. The identity of the two histories is so perfect that whatever may be true of one may be assumed for the other. The influence of the sick upon the well, in this particular disease, is so well established, that it does seem strange that many will resort to local causes to account for those results which are so much more rationally explained by the facts connected with personal causes. Who can say that Abbot would have died of yellow fever, if Garcini had not brought the disease from Havana? Would Nelson have died, if Diola had not been in the next room with the identical disease?

I have presumed that Abbot's disease was not primarily yellow fever, notwithstanding its resemblance to it, but became yellow fever under the plastic influence of the genuine disease in the person of Garcini, who had recently arrived in the Catawba from Havana. I found this presumption on the observation of many cases of fever which came under my notice, which were at first reported to be yellow fever and subsequently proved not to have been. It is probable, that these fevers continued to occur during the whole summer,

and increased the extent of the epidemic by frequent conversions of type in susceptible persons, under the influence of effluvia emanating from persons in the neighbourhood afflicted with the genuine disease. These mild, possibly malarial fevers attacked natives as well as foreigners, the acclimated as well as the unacclimated, the negroes and colored as well as whites, and presented various degrees of intensity, frequently passing into yellow fever and death, but oftener into recovery. Many persons who had yellow fever in former years declared that they had the fever again in 1858. And the cases were so numerous as to leave no doubt, that we had a malarial fever prevailing at the same time with yellow fever. Under these circumstances, it is not surprising that errors of diagnosis should have been committed. At the onset of disease it was impossible to say which would terminate the case. If the patient was a stranger we apprehended the fatal yellow fever, if a long resident we might hope for a speedy recovery. Now if this uncertainty prevailed during the epidemic, how much more uncertain must our diagnoses have been before the epidemic was fully developed? And how probable does it seem that Abbot's disease did commence as malarial fever, and subsequently assumed the type and fatality of the recently imported West Indian disease, and was but an unrecognized prototype of many cases which followed under similar conditions.

The deaths of Garcini and Abbot on the 15th and 18th of July excited the medical mind to watch for the first signs of propagation of the disease, which from previous observation was reasonably expected. The seed was planted, the soil and climate were propitious, and we had only to wait for the germination. On the 21st the alarm was sounded in the person of Cathcart, residing in Whim's Court, King street, a policeman from New York, and well suited to receive either disease; the result proved that he had the native malarial, and not the foreign introduction of Garcini; for he speedily recovered, and later in the season fell a victim to yellow fever. Another policeman of the name of Nevins, residing in Tradd street, at the Carolina Coffee House was the first to

sicken, and die of yellow fever. He was attacked on the 30th July and died the 5th of August. We have no positive information relative to his previous movements, except that he had visited Fort Johnston, and as a policeman may have visited the neighbourhood of Garcini's and Abbot's house. The infection of the neighbourhood is so well established by other testimony, that the proof that Nevins did duty in the neighbourhood, could add little to the force of conviction. If others, as will appear hereafter, did take the disease by passing the house of Abbot, it is probable that Nevins did also, and suffered the usual penalty. Coincident with Nevins, in attack and death, was a negro, residing in Broad street, between King and Meeting, who was recently from Orangeburg District and a stranger to the disease. His residence in Broad street was but nominal, for he slept in King, and twice each day passed the house of Abbot. The infection of Abbot's house is further shown in the case of E. Coffine, an Irish carter, residing No. 3 Lingard street, who was attacked August 6th and died on the 14th. This man was employed in carting materials to fill up Tradd street, he passed and repassed the house several times each day, and occasionally entered the premises to satisfy his thirst. The 5th is recorded as the last day of work in that region. Coincident with the carter who visited Tradd street, was Mrs. Bauer, who resided at the corner of King and Tradd street, and within a few feet of Abbot's house. She died on the 12th. On the 8th and 10th her daughters sickened, one recovered, the other died on the 13th. On the 10th a German girl immediately opposite Abbot's house sickened, and died on the 13th. Many other cases immediately succeeded each other in this neighbourhood, all tending to show that germination had commenced, and that a fearful harvest was to be gathered. At this period much malarial fever prevailed in distant parts of the city, and some of them were reported as yellow fever which the subsequent history disproved; for they recovered and died afterwards of yellow fever in its unmistakable form. The propagation of the fever from its primitive location was observed to occur both by diffusion

and transportation. In process of time, the range of cases was enlarged from the corner of Tradd and King streets, among the fixed population, to all of the neighbouring streets, and soon became so wide and general as to defy correct record. Lingard street soon became another centre of propagation. Receiving the disease by transportation, through the Irish carter Coffine, it was subsequently extended both by transportation and diffusion. "In the room in which the first case occurred were 4 other occupants, and in the same house were 4 others. None of these 8 men took the disease while the case was in progress, but as soon as its nature was ascertained, they scattered, and carrying the germs of disease with them, as many as 4 sickened in various localities to which they went, and spread the disease over Lingard street and neighbourhood." It is not necessary to pursue the propagation of the fever any further. If we have succeeded in pointing out its first location, the method by which it was there carried, and its subsequent spread to all parts of the city, we have accomplished our design. Perhaps there never was a summer when the facts were more clearly observed and the conclusions more positive, notwithstanding the complication introduced by Abbot, and the simultaneous prevalence of a native malarial fever, than the summer of 1858. If we reject Abbot altogether, and the various visitors to his neighbourhood, who received and developed the disease in other places, and limit ourselves to the fixed population of Tradd street, we will find the facts equally conclusive. Garcini arrives from Havana, locates in this street, develops yellow fever and dies on the 15th of July. Ahrens is repairing the adjoining house, converts a cellar into a cistern, and removes a privy. During his illness a "fearful odor" of a cow yard, was perceived in the street; on further examination into this "fearful odor," it was found that a heap of filth, recently excavated from the cellar, was piled up in the angle of the two houses, six or seven feet high, and within two or three feet below the window of the room occupied by Garcini. I have been thus particular to give my readers a choice between two local facts, of an odor from a cow yard, and a

mass of earth from an excavated cellar, to account for the origin of yellow fever in Garcini, or the more commonly observed fact, that when a subject visits an infected city, he returns with the disease upon him. From annual observations, I am inclined to think that "fearful odors" and excavated earth, are not adequate to produce such fearful results, and if Garcini had stayed at home, we never would have known of the presence of a heap of cow manure in Tradd street, nor the improvement of these premises by placing a cistern where a cellar formerly was. Such things are perpetually being done, and are unnoticed because unavailable for a *scientific* purpose. It is injurious to commerce to admit the possibility, that a man can return from Havana and bring the yellow fever with him, notwithstanding the repeated observation of the fact, and its fatal consequences. An injury to the city by the destruction of one thousand inhabitants is a damage easily repaired, but commerce must not suffer by the suspicion of being accessory to this terrible calamity. It is for this reason that local causes are sought out. Cellars and sewers are occasionally condemned when in the vicinity of the sick, but harmless at all other periods. The time was, when the filthy docks bore the blame of local origin to yellow fever, but since the operation of Quarantine, and the detention of infected vessels at a distance, they have been found to be innocent and slander has ceased to assail them. If the interests of the city alone were consulted, and a particular trade detached from general commerce and deprived of its imperious sway, it would soon be discovered, that local causes play a subordinate part in the tragic scenes of our city, while at other times they are the foundation of that superior health which we are accustomed to boast of when yellow fever is absent.

Garcini died on the 15th of July and left the city in the enjoyment of health. Reports were, however spread in the country that yellow fever was in the city, and prudent customers avoided us. A reverend gentleman who had returned from the interior, and found the city still free from an epidemic, proposed that I should publish a card on the 3rd of August declaring the city healthy,

and assuring the country gentlemen that they might return with safety. I declined, on the ground "that by the time the gentlemen arrived, they would discover that I had lead them into danger, for I never knew so palpable a case as that of Garcini, to be introduced into our city, without producing an epidemic, and that the most frequent date of development, was the 7th of August at which time I apprehended that the epidemic would be known. But if you will have patience, until the 14th, and no epidemic is then reported, I will assure the gentlemen that they may come." We now know that at the time of this conversation, Nevins and the Broad street negro, were suspected of having the disease, for they died two days after, on the 7th. Mrs. Bauer, living near Garcini's house, was declared to have yellow fever. Thus the epidemic was established about its usual period, and continued to extend to the end of the season. It is certain that at the time of Mrs. Bauer's attack there was no local cause for the disease on Ahrens' premises. All the alleged odors, and filth had been removed, the cistern was completed, and Garcini's house had been scoured, white washed and closed, its inmates having been sent to the Lazaretto. Yet strange to say, the disease of Garcini survived in the person of Mrs. Bauer, and shortly after in the persons of her two daughters, and finally extended to more remote distances from the original source. The intervention of Abbot then becomes but an episode in the general tragedy of Tradd street. The same events would have occurred without him, or without Ahrens' improvements, as did actually occur in Lingard street, where the Irish carter first transported the disease, and where it was extended without regard to any particular local causes, to which its origin could have been attributed. It is curious, and perhaps inexplicable, that the advocates of the domestic origin of yellow fever cease to investigate local causes after the first case. We have no observations of odors, filth or upturnings of the earth in Lingard street, yet the disease was as virulent and extensive there as in Tradd street. The general filth of the city seems to be sufficient to produce the disease anywhere after its first introduction, but for the *first*

case something extraordinary must be pointed out, anything, in fact, which will direct attention from the pernicious doctrine that the disease may be imported, and that the West India commerce may suffer if such a belief becomes prevalent. It is treason to the West Indian interest to charge it with the introduction of a pestilential disease, even if we see its entrance through Garcini, and observe its propagation from the position that he occupied. Is it not a crime of deeper dye to sacrifice the health and happiness of our whole community, to paralyze, for three months, all other commerce, and to expatriate our citizens, for the simple purpose of granting to a few a freedom of commerce, which is intrinsically valueless to the city? for the same articles may be imported from sound parts in sufficient quantities to supply the demand, at prices not exceeding the directly imported articles, whenever the received supply shall fall short of the demand. Could a portion of the mercantile community be induced to yield their rights to the general welfare of the city, it is acknowledged that the most certain, economical and efficient protection against the introduction and spread of yellow fever would be the suspension of the West India trade for three months. During the other nine, the whole work could be done, and a supply left in store to supply all necessities arising from the temporary suspension.

It is a common argument advanced by the merchants, that yellow fever is not introduced by commerce, because commerce has frequently failed to bring it. In other words, we have for a season, and for many seasons, been exempt from the disease, notwithstanding an active commerce has been carried on. This is certainly true, but cannot outweigh nor contradict the positive observation that commerce has brought it on many occasions. All the observations made since 1838, have concurred in this common truth; and the facts above detailed, relative to its importation in 1858, are beyond the powers of a reasonable contradiction. It is certain that our predecessors never traced out the origin and spread of the disease, and were perfectly ignorant of its mode of entrance or origin. To assert that it was not intro-

duced by commerce, when it is apparent that they never made any inquiry, is to assume that to be true which has not been proved, and in regard to which no testimony can be adduced on either side. Recent researches have proved beyond a doubt many points that our forefathers never suspected nor investigated; and their negative testimony is but evidence of their carelessness and credulous reliance on the admitted doctrines of their day. The origin of yellow fever is not a medical question, it is a mercantile question. Any prudent physician would give the benefit of a doubt in favor of the inhabitants of a city, and decide that the liability to infection is sufficient to suspend a particular commerce, provided that liability was established by the observation of any one season. But the merchant opposes this humane decision on the plea that it is an interruption of commerce, and an interference with his private pecuniary interests. Public interest is but the sum total of private interest, and if you injure one of these "little ones," you injure the whole. The apple woman, at the corner of the street, has a right to garnish her tray with bananas and pineapples, and it is better that hundreds should die rather than that this privilege should be curtailed. Poor woman! how unconscious is she of the zeal and disinterestedness of her commercial protectors, when in her native benevolence she would give her whole capital and stock in trade to avert the disease from a single victim. The free trade principle may be precious to the merchant, but he should have the magnanimity to inquire into the fact maintained by others, that plague and pestilence follow in the footsteps of a continuous and indiscriminate exercise of his alleged rights, and that the evils to the public far outweigh the private benefits. There is but a step between legitimate and licentious commerce; and any commerce is licentious which becomes injurious to the public; and any commerce which is injurious to the public should be suppressed or suspended by those in authority, who are presumed to be empowered to take care that the commonwealth shall suffer no detriment.

The frequent exemption of our city from the ravages of

yellow fever, when an uninterrupted commerce with the West Indies was maintained, is no proof that it is not brought to us at other seasons. The examination of the general fact may throw much light upon the particular facts, and lead to a principle of great practical value. It may be the means of correcting many popular errors which lie at the foundation of an honest prepossession, and enable us to distinguish established theories from assumed hypothesis. It is a common assumption with some, that the air of an infected city may be brought by a vessel, and, when liberated, may infect the citizens; and that every vessel, thus arriving, is equally charged with the same poisonous material; and entertaining this view, many are of the opinion that simple ventilation is sufficient to expel it. This view may be perfectly correct, provided that no yellow fever case has been on board; but if such a contingency has happened, no ordinary ventilation nor reasonable time for self purification will succeed in removing the infection. Thus, the presence of the disease on board materially alters the condition of the vessel, and what is true in one case becomes untrue in the other. The danger of a vessel, then, consists in the fact of having had a case on board, and not that she has arrived from an infected port. Many vessels annually arrive in our harbor without having had a case during the voyage, and are perfectly harmless; and many seasons of exemption are explicable on this fact. During the season of 1858, of one hundred vessels retained at Quarantine, only ten developed the fever; and possibly only those ten would have been detrimental to the city, while the ninety would have been harmless. Of the ninety we may allow ten as having had concealed cases; there still remain eighty that might have come up to the city without provoking an epidemic. During the season of 1857, seventy-eight vessels were retained at Quarantine, and but one developed the disease (the *Ciscar*), and only two others are known to have had the disease on board previous to arrival; thus sixty might have been admitted to the wharves without the production of an epidemic. During the present season of 1859, no vessel with the disease on board has ar-

rived, and but one discovered which had the disease on board before sailing for this port. Hence, with the single exception just mentioned, we might have escaped an epidemic this season without the exercise of any quarantine. That similar exemptions may have proceeded from similar failures to bring the disease into port, on other occasions, is very possible; and the failure of our records to show a case at the Lazaretto during the years of exemption, proves incontestably that no vessel arrived with it on board, and we may infer that no vessel arrived in our port which had had it previous to sailing. If only six, out of one hundred vessels which arrived in our harbor in one season, were infected, it is not wonderful that thirty, forty, or even fifty, might arrive without infection during another season. Or the case may be stronger, when only one out of sixty-eight arrivals is observed to be infected. Hence if this one had taken another direction, sixty-seven vessels would have arrived without the means of doing mischief, and the friends of the West Indian commerce would exultingly have pointed to this particular season to prove that the disease is not imported, because so large a commerce was carried on and no fever prevailed. But the history of 1857 tells another tale; for among the sixty-seven there was one that had had the disease on board, and that one infected two others, and was the means of introducing the disease into one portion of the city; while the vessel which brought the disease, at the time of arrival, succeeded in infecting another vessel, which, when liberated, infected the village of Mt. Pleasant. It is thus apparent that seasons may and do occur, when no infected vessel enters our harbor, and those seasons are marked by a continuation of normal health. There are other seasons, when only a few infected vessels arrive, and with proper care the disease may be limited to the Lazaretto; but it has most commonly escaped and invaded the city. Thus a careful examination of the facts disprove the general impression, derived from the occasional exemption of the city, that the yellow fever is never imported. It proves satisfactorily that when it is not in the city, that it has not been imported;

and also, that when it is in the city, that it has been imported—a conclusion which the particular history of each year, in recent times, satisfactorily establishes. There is nothing in the local affairs of the city, nor in the meteorological condition of the atmosphere, which can account for the exemption of 1859. Had the disease appeared, our opponents would have attributed its local origin to the intense heat, excessive rain, general filth, cleaning out of old drains and distributing the contents on the surface of low streets, and particularly to the extensive excavation in Meeting-street, for the construction of the tidal drain. But the disease is not here; therefore these causes, so satisfactorily and conclusively advanced on other occasions, to account for the presence of the disease, cannot account for its absence, and have certainly failed to produce it. Local and climatic causes which were adequate to produce the disease in 1858, should do the same in 1859, or confidence in their powers may be diminished. “Fearful odors” of cow manure have been produced, cellars have been excavated, premises have been generally filthy, and back buildings have been occupied by colored persons, yet no fever has been engendered. These four causes, which were relied on to produce a fever in 1858 in a man recently from an infected city, have totally failed in 1859 to produce a similar fever in any person who has remained at home. It may, then, be doubted whether they were the true cause of fever in 1858; and as Scharwacter took fever without the concurring agency of these causes, and some others arrived from the Havana with the disease upon them, we may fairly infer that Garcini brought the germs of the disease from the Havana, which were naturally developed in process of time, and would have done the same, irrespective of any local cause existing in the city at that time.

From the statistics of the three last years we observe that the per centage of infected vessels is 10, 2 and 0; and although from the nature of the disease the 2 may be as dangerous as the ten, no evil whatsoever has arisen from the 0 per cent. During the whole period of Mr. Creutzburg’s

administration as keeper of the Lazaretto, no yellow fever case was landed in any one healthy year. What it may have been with his predecessor, we have no means now of learning, as the books are lost. The imperfect laws, which were then imperfectly executed, can teach us little which is positive; for the vessels were liberated, and the first intimation that we had of the fever was its prevalence among the shipping at the wharves, or in the Marine Hospital. From these points it spread over the city, and deceived the people into a belief of its domestic origin, which policy induced many to encourage. If the proportion of infected vessels is as small as our statistics show, there can be nothing extraordinary in the observation that many summers pass without the arrival of a single one, and as a sequence, those summers are free from the prevalence of the disease. While in other summers a single infected vessel arriving at the wharf has infected the whole city, and produced as much injury as if the whole number had been infected. The alleged biennial visitation of fever to our city, is by no means a fixed fact; nor is it a character of the disease. The time has been when it was annual. From 1792 to 1804, it appeared ten summers out of twelve. It has occasionally been absent ten years; once upwards of twenty, and at another time upwards of forty years. It is certain that neither changes of climate, nor local causes, can account for this irregularity; but it is by no means certain that the revolutions of commerce, or the especial modes in which it was conducted at different times, may not have had an efficient agency in producing this irregularity. We have noticed the comparative paucity of infected vessels which visit our port during our most fatal epidemics. If we now turn our attention to the crews arriving in all the vessels, we will be astonished at the wonderful paucity of cases which arrive. We are erroneously led to suppose that every one who arrives from Havana, during its epidemic period, is doomed to take the disease. The records show a very different result. Of 1261 passengers who arrived in 1858, not one had the disease; and of 1328 officers and sailors arriving at the same time, only 16 had the dis-

case. In 1857, 280 passengers arrived in health; and 516 officers and sailors, of whom 7 had yellow fever, and all belonged to one vessel (Ciscar), which had a crew of 11. We do not expose these records to prove the folly and cruelty of detaining so many sailors at the quarantine station, when so few are really capable of injury, but to show how possible it may be that successive seasons may pass without a single arrival of a diseased sailor; and these are the seasons which are characterized by the continuance of perfect health; and these seasons may be multiplied at will by a judicious regulation of this particular commerce, or more certainly by its suspension for certain months in each year. Our people have vast faith in the potency of money, when expended by the city or State, and they are induced to believe that the expenditure of \$50,000 by the State in the erection of a Lazaretto and stores, at a distance from the city, will eventually protect it from the epidemic. There may be some safety in distance; but if a constant communication is to be kept up by steamers, distance will prove of no security; and if constant importations and exportations are to be carried on, we will soon discover that a six hours voyage is as dangerous as a one hour's voyage, and that all the alleged objections to the present station will apply to another at a greater distance. If non-intercourse shall become popular, the present station will be necessary for the reception of distressed vessels, a certain number of which we have a right to expect each year—especially after the annual gales—and some provision should be made for their assistance and accommodation, as well as for the protection of the city from the contingencies of their infection.

The frequent failure of the West India vessels to bring cases of yellow fever to our city, not only accounts for its occasional absence, but is interesting as opening a field of research by which we may be enabled to ascertain the conditions, and, perhaps, succeed in applying the principles to the accomplishment of a safe trade. Independent of the danger, there can certainly be no other objection to a West India commerce; but until means are discovered by which

this danger may be removed, the safer way is decidedly to limit the trade to certain months which are known to be incapable of propagating the disease if accidentally introduced. With no other object in view than the welfare of the city, I would receive with delight any plan by which the benefits and evils of this particular commerce may be separated. I would rejoice with the merchants that a safe, fair and free trade could be established. I would also rejoice with the citizens to be relieved from the annual apprehension of disease and death. Improbable and uncertain as such a result may be, it is worthy of investigation; and some hope is derived from the fact that accident has occasionally accomplished that which art may always effect, provided we know the exact conditions which constituted what we have called accident, and invariably take care that those conditions and no other shall exist. It is well known that yellow fever has been a denizen of the West Indies since the settlement of Charlestown, and possessed the same properties then that it now does, yet its introduction into Charleston was, in its infancy, comparatively rare. From 1700 to 1792 it was rare; from 1792 to the present period it is comparatively frequent. Thus 1792 becomes the dividing period between the two series of Dr. Ramsay; or in other words, the division between rarity and frequency. If we could establish the fact that there was no commerce prior to 1792, and a large commerce afterwards, the question would be easily settled. But such is not the fact. By reference to the marine list of 1783 in the State Gazette, we find vessels arriving from the following ports, viz: St. Thomas, St. Eustacia, St. Kitts, Port au Prince, St. Christophers, Havana, St. Lucia, Hispaniola, Barbadoes, Jamaica, Cape Francois, Dominica, Curacoa, St. Croix, Martinico, Granada and Guadaloupe. By turning over to 1793, we find a similar list, viz: St. Eustacia, Jamaica, St. Thomas, Hispaniola, New Providence, Cape Francois, Aux Cayes, Martinique, Nassau, Port au Prince, St. Bartholomews, Barbadoes, St. Johns Antigua, Dominica, and Havana. Without attempting to show which was the larger commerce in these two equally healthy years, the fact

is evident that an extensive trade was carried on at these and intermediate times. By reference to 1803, we find the following list, viz: St. Vincent, Porto Rico, Trinidad, Cape Francois, Nassau, St. Thomas, Havana, St. Domingo, Kingston and Antigua. In 1813 the trade was limited to Havana and Matanzas, showing clearly that the absence of fever from our city was not produced by an absence of West India commerce, but proceeded from causes which we now propose to investigate.

The existence of yellow fever in the West India Islands is known to have preceded the year 1700, but it was only occasional. In 1793 there commenced a new era; a fresh importation was alleged to have been received in the island of Granada, and the ship *Hankey* and the African island of Bullam became celebrated. Be this as it may, it is admitted that the disease became more frequent, and covered a larger space than it did before. Islands that never before witnessed the presence of the disease, were now involved, and it is certain that its appearance in the United States became more common. The New York fever of 1791, and the Charleston fever of 1792, must have belonged to the old series; but the fevers of Philadelphia in 1793, and subsequent years in most of the northern and southern cities, may have appertained to the new series. Suffice it to say, that from 1791 to 1807 the yellow fever prevailed annually in some of our ports, without much respect to latitude, local causes, or meteorological conditions; for New Orleans, Charleston, Norfolk, Baltimore, Philadelphia and New York suffered alternately or simultaneously. Every summer of this period of years was marked by the appearance of the disease in one or more cities of the United States; and it is almost incredible now to notice that it occurred in Philadelphia precisely the same number of times that it did in Charleston as an epidemic, and if we include the sporadic years, it was twice oftener in Philadelphia than in Charleston, to wit: Charleston 10, Philadelphia 12. That an increase of extension and frequency in the West Indies should have been attended by a similar increase and frequency in

the United States, is reasonable; but still it will not explain satisfactorily, why, after an exemption of forty years, it should have occurred annually, visiting with equal regularity northern and southern cities. No natural cause of origin, dependent upon climate or locality, could have produced so extraordinary an effect in so short a period, and persevere in it for so long a time, and then return to an exemption of ten years, i. e. from 1807 to 1817, without leaving some record on the meteorological tables of such a climatic change. We must here look to art, and we find it coincident with the passage and operation of the American Navigation Acts of 1789 and 1792, which, while securing a monopoly of the coasting trade, gave encouragement to foreign trade also, especially to the West Indies and other ports on the American continent. Prior to this period, the West Indian trade of Charleston was carried on by Charlestonians and by West Indians. Schooners and sloops were exclusively used, and manned by sailors habituated to both climates. South Carolina regulated her own commerce, and directed it according to her own interests. Experience had demonstrated that a vessel could not become infected simply by visiting an infected port, return and expand the disease throughout the city. Experience also proved that West Indians were incapable of bringing the disease with them, forasmuch as they were incapable of taking it themselves. This immunity of the West Indians was observed to appertain to the Charlestonians, after having had the disease themselves. Hence crews made up of men habituated to the disease, were enabled to make voyages between Charleston and the tropical islands, without danger to themselves or their fellow citizens. Small vessels, owned and manned in Charleston, in conjunction with other small vessels owned and manned in the West Indies, carried on the whole West Indian commerce for upwards of one hundred years, with the slight accident of seven epidemics, occurring at the earlier period, viz: 1699, 1703, 1728, 1732, 1739, 1745 and 1748. Had the Assembly of South Carolina understood the foundation on which this comparative security rested, it would have been simple, easy and ef-

fectual to have introduced a regulation by which the trade could have then been made absolutely safe, and no merchant would have been injured or aggrieved. Had it been clearly set before them that the danger of importation consisted in the liability of a sailor to take the disease in consequence of non-habitude to that particular disease, to return with it upon him, or to infect the vessel during his illness, which infection remains on board of the vessel as long as she continues in a quasi-tropical climate, and ready for diffusion whenever an opportunity should occur, it is certain that some restraint would have been placed upon the indiscriminate enlistment of sailors, or the equally unguarded acceptance of apprentices. It is not possible, at this distant period, to determine to which of these indiscretions the exceptions of safety are to be referred, and it is possible that we may add non-habituated passengers to the list of dangerous subjects.

After 1789, this comparatively safe interchange of productions, until then carried on by habituated officers and sailors, was divided with northern vessels, manned by northern and unacclimated crews, ready for any enterprise and indifferent to any danger. Wherever a barrel of rice, a hogshead of sugar, or a bag of coffee was to be found and made into freight, there these vessels were to be found, ready to carry it to any part of the United States. They also carried supercargos, prepared to buy or to sell anything at any place. Free trade was carried on to perfection. Although money was made, a sad sacrifice of human life was also made. To replenish a crew was a quick and frequent operation, but to eradicate the evils that they brought to the different seaports, was not easily done. The introduction of the West India yellow fever into almost every seaport from Georgia to Massachusetts, was the fruit of these voyages; yet the citizens, so interested in the profits of this pernicious trade, as then conducted, were unwilling to attribute it to any other than a natural cause, unconnected with any change in their commercial arrangements. The importation of molasses gave rise to the manufacture of rum, a large article for ex-

port, which, in addition to what are now called Yankee notions, constituted their exports. Thus the local inhabitants became interested in the advantages of this trade, and were advocates for its continuance, piously trusting in the Almighty for a reversal of his desolating decree, and endeavoring to hasten his decision by humiliation and prayer. To give some idea of the effect of this trade, it is only necessary to enumerate the following cities and towns as having been invaded by this fleet of coasters and made to suffer the fatal consequences of the first attempt of Congress to establish free trade by the memorable Navigation Act of 1789, and its amendment in 1793. Yellow Fever appeared :

In 1790. New York, sporadic.

" 1791. New York, epidemic and violent.

" 1792. Charleston, epidemic.

" 1793. Philadelphia, epidemic.

" 1794. New York, New Haven, Baltimore and Charleston.

" 1795. New York, Bristol, R. I., Providence, R. I., Norfolk and Charleston.

" 1796. Bristol, Providence, Boston, Newburyport, New York, Philadelphia, Norfolk, Charleston and New Orleans.

" 1797. Bristol, Providence, Boston, Philadelphia, Baltimore, Norfolk and Charleston.

" 1798. New London, Conn., Westerly, R. I., Stonington, Conn., Boston, New York, Portsmouth, Philadelphia, Wilmington, Del., Baltimore, Norfolk, Alexandria and Petersburg.

" 1799. New York, Boston, Philadelphia, Baltimore, and Charleston.

" 1800. New York, Providence, Philadelphia, Baltimore, Norfolk and Charleston. Spain.

" 1801. New York, Philadelphia, Baltimore, Norfolk and Charleston, (sporadic only). Spain.

" 1802. New York, Philadelphia, Wilmington and Charleston. Spain.

" 1803. New York, Philadelphia and Charleston. Spain.

" 1804. Charleston. Spain.

" 1805. Philadelphia and Providence.

" 1807. New York and Charleston.

" 1809. Brooklyn, (New York.)

" 1811. Spain.

In the year 1808, the prayers of the people of these United States were answered, according to their desires, and the plague was stayed. The troubles with England and France now commenced. Embargoes and non-intercourse were the order of the day. The northern coasters were kept at home, and health was restored to the United States. The war soon followed, extending our term of health, and continuing it to 1816, when peace was proclaimed, and the coasters were again on the ocean. In 1817, disease returned, and has continued to prevail, more or less, ever since. It is worthy of remark, that during the war, the Charleston and West India trade returned to Cuban vessels, and, notwithstanding an active trade with Havana and Matanzas, no epidemic appeared, yet it is recorded that a few sporadic cases occurred in 1812. The amity between England and Spain warranted our commerce with Cuba, but limited the carriage to Cuban vessels. Neither Old Spain, nor New England, with their non-acclimated crews participated therein; hence the security from disease which was so manifest throughout the United States from 1807 to 1817.

I am fully aware that previous attempts have been made to connect the occurrence of our epidemic yellow fever with the political necessities of commerce, but it has been limited to the increase or diminution of commerce at certain periods, and has had no reference to the peculiarities incident to vessels and crews continually passing between infected and uninfected cities. On the common doctrine of chances, a less commerce should insure less danger, but our dangers have not been commensurate with the quantity of commerce, but with the quality. One vessel with a northern or European crew is seen to be more dangerous to the health of cities, than one hundred vessels with crews habituated to the climate and diseases of Havana. It seems to be through persons alone, primarily, that the disease can be transported from one place to another, and that person must have the disease, or he is innoxious to his non-habituated neighbor, and also incapable of infecting the vessel on which he sails. No one will question the fact, that a vessel may be manned

by any number of sailors, who have already had yellow fever, that they may be sent to Havana during the epidemic there, that they will not again take the disease, nor will they bring it back to Charleston. The men will return well and sound, and the vessel will be uninfected, and, of course, incapable of infecting any person who may go on board. Voyages of this kind would accomplish the legitimate object of the merchant, and not react upon the legitimate interests of other people. We will now repeat the voyage with the introduction of one rubicund, jolly Jack-tar from Ireland into our ship's company, and observe the result. The outward voyage may be enlivened by his wit, and assisted by his strength and activity. The company may have a gallant spree in the charming Havana. The ship is discharged, re-loaded, and returns to our port, say at the end of July. Our jolly Pat is no longer the life of the crew. He is desperately ill, and must be sent to the Marine Hospital. On arrival, the dreaded yellow fever is developed, recognized and proclaimed. His death astonishes no one, but his disease must be concealed for a while, or an alarm may be created among a timid people. One week after the arrival, a sailor in an adjacent ship is suddenly seized with fever, no known cause can be assigned, but the filthy mud in the dock, and yellow fever is again recognized. About this time a sailor in the hospital may be taken, and a stranger living in a filthy portion of the city is reported as suspicious. Soon, however, the cases multiply, and we have an epidemic condition of the atmosphere, as it is termed, by which any non-habituated person may be seized with this especial disease, and fall a victim to what is called acclimation. So especial and peculiar is this acclimation to our city at this particular time, that a man who has resisted the violent fevers of the country, which are death to the inhabitant of the city, dares not visit the city; for acclimated though he may be, to the climatic fevers of the swamps and rice fields of South Carolina, he cannot resist the epidemic condition of the atmosphere, which our generous Pat has produced by his thoughtless visit to Havana, and his return, with the disease there

acquired. He has sowed the seeds, as it were, broadcast; he has eliminated from his person a matter which seems to have dissolved in the air, and imparted to it a faculty for diffusion and destruction, which none but those accustomed to its action—that is, those who have previously experienced its influence, like the ancient kings who habituated themselves to poison, by its daily use, in order to resist its action when criminally administered—have been able to escape.

Habitude to the poison is the only safeguard against its deadly influence. Acclimation to the latitude is no protection; hence persons who live within ten miles cannot with safety visit the city during the epidemic. Children born between epidemics, or who have been absent during epidemics, are as strangers, and frequently fall a sacrifice to the erroneous belief that nativity and general residence produce acclimation, and that acclimation is habitude to the disease. A country negro is acclimated, but he is not habituated to yellow fever; as is proved by frequent cases among negroes from the adjacent islands and main-land. The distinction between acclimation and habitude, seems to be clear and well founded in observation. Acclimation does enable us to enjoy general health in Charleston, notwithstanding extremes of heat and cold, wetness and dryness, and the other vicissitudes of weather to which we are subjected; but habitude alone, as produced by frequent and early exposure to the poison of yellow fever alone can defend us from it, when re-introduced by importation from another infected city. The dreadful calamity and universal spread of the disease at Norfolk in 1855 was produced by want of habitude to the disease; acclimation naturally existed among the inhabitants, but an absence of the disease for so many years had destroyed the habitude. The habituated generation had died out, and a non-habituated population had taken their places. All were subjects for the disease, and faithful indeed was the fever to detect its old acquaintances, and spare them; few, indeed, but unerringly correct. A return of yellow fever to Charleston after an absence of thirty years would find us as illy prepared to receive it. Acclimation would be perfect, a new and non-

habituated generation would be in existence. The physicians would not know how to treat the unaccustomed dreadful disorder. The fall of a few would create a panic, and we would have repeated the dreadful scenes enacted in Philadelphia in 1793. The thirty years accumulation of a population would be decimated in one summer; nativity, residence and alleged consequent acclimation, to the contrary notwithstanding. In anticipation of such a scene, some have advised that we import the disease every summer, thus to habituate annually all the children that may be born, and other new comers, in the wise hope that by distributing an evil through a series of consecutive years, we will ultimately mitigate its magnitude. An extreme pietist may deem it safer to die in infancy, than in the wickedness of maturity; but the majority of mankind prefer the evening of life, when we can bid the world a cordial farewell, after having fulfilled our respective destinies, and done those things which we should have done, even, if we have left undone many things which should have been done.

It does seem incredible, that, in an enlightened age of moral and religious light and liberty, a minority should plead in vain for the preservation of their lives; that a monied majority, under the plea of commercial freedom, should be accessory to the introduction of a pestilence annually among our citizens, in order to obtain from them an increase of wealth, or that a foreign merchant should have the privilege at any season to send us his produce, irrespective of any danger that may accrue to the citizens, totally heedless of those hygienic laws which have been observed to regulate the prevention or introduction of disease. A conservative adherence to the practices of our forefathers may be meritorious, so long as we remain in their ignorance; but when a new and true light bursts upon our view, and dispels our ignorance, conservatism is no longer a virtue. Consciousness of ignorance is the first step to wisdom, as the turning from wickedness is the first fruit of repentance. Reforms arising from the conviction of error, are salutary and permanent; but reforms are never effected without a sacrifice of pride, of feeling or of interest. The pecuniary

benefits arising from the West Indian trade, induce many to desire its continuance. The pride of opinion in maintaining early impressions, the humiliation of any recantation expressive of change of belief, and the uncertainty connected with any modification of action, relative to success, are so many reasons against the unanimity of any creed or course of duty. Habit has reconciled us to the misfortunes of others. It was appointed once for all to die, and we seem to be indifferent whether we see others die of fever or of age; whether they die in the morning, in the noon, or the evening of man's allotted period; whether we drag down to the grave the young, the stranger, or the sojourner. One fact is paramount, habitude has fortified the native and the initiated, and he can play the good Samaritan without fear and without favor, and still pursue his ordinary avocations, regardless of the afflictions which encompass others. The time was when Charleston was famed for its hospitality and kind attentions to strangers. Public hotels were not in existence, nor were they necessary. Each inhabitant entertained his acquaintance as one of his family, and when the fever made its appearance, the stranger was transferred to another, who enjoyed the happiness of living in a presumed healthy locality, and who immediately accepted the charge, and esteemed it a privilege and a pleasure to offer an asylum to a stranger and protection to a fellow being.

Such was the benevolence of Charleston before it aspired to become the commercial Queen city of the South, when the yellow fever was universally believed to be a direct and inevitable visitation, belonging to our climate, and proceeding from it, as did the endemic fever of the country with which it was deemed identical. This belief in the identity of the two diseases was common among the people and the medical profession, and all attempts to establish its truth or falsity were considered to be a work of supererogation. In the year 1839, Dr. Strobel, then physician to the Marine Hospital, was startled by some curious occurrences, relative to the arrival of vessels from the West Indies bringing cases of yellow fever, and the apparent

dissemination of the disease from these vessels to others from healthy ports. He traced its introduction and diffusion both in the hospital and in other parts of the city, and as in duty bound he published the result of his careful observations. He was condemned by the profession, and voted to be inaccurate in observations and in references. In 1852, the fever reappeared, and similar observations were made, and, to abbreviate the matter, each successive year has tended to confirm the observations of Dr. Strobel, as a reference to the detailed histories published in this journal of each epidemic will clearly show. The effect of a public discussion was to strengthen the old quarantine laws, but still to leave them imperfect, and in such a degree of looseness as to be violated by force or fraud, as parties desired. Discretionary power could be exercised for the protection of commerce, or for the protection of the city, it being well known that any action for the benefit of commerce was dangerous to the city, while any action for the safety of the city was detrimental, or at least inconvenient to commerce. The exact line of duty which would injure neither commerce nor the city could not be defined. It is an attempt to reconcile antagonistic interests, and like all such attempts, will fail to accomplish the desired end. West Indian commerce, and continued health in Charleston are incompatible. We must abandon the one to preserve the other, or we must exchange the health and lives of many, for the benefit of a few. The merchants or the people must yield; the minority must consent to give up their privileges to secure health, happiness and life to the majority, and whether the merchants interested in this particular trade are a majority, is a point yet to be determined.

Allusion has been made to the possibility of carrying on a safe trade with the West Indies, by habituated crews, in vessels owned in Charleston or in the West Indies. Such voyages seem to have been successfully made in former times, but occasionally they have failed, and the city has been unexpectedly overwhelmed by the disease. The difficulty of determining accurately those who are and those

who are not habituated, will ever prevail, and the uncertainty will increase the longer we are exempt from the prevalence of fever. It is manifest that when the present habituated sailors shall have died out, that Charleston could not supply the deficiency, for her whole population will have lost the habitude, and if we persist in this trade on this principle, it is certain that the seamen must be supplied by the West Indies, and the trade will fall into their hands. If this West India trade was of vital importance to the city of Charleston, and we had determined to pursue it, with minds fully prepared to undergo the fever occasionally, then we might hazard the plan of habituated crews, hired by the life-time. But the true policy of the city would be to incur no risks; to secure the health of the people, and to accomplish that desirable object, we must sacrifice the profits and comforts of the West India trade for four months in each year, beginning in June and ending in September. It may be a question whether the city has the power, but there is no question relative to the power of the State; and if the Legislature will pass a bill prohibiting all intercourse with the West Indies, and all other ports known to be liable or that actually have the disease, Charleston will be exempt from the great cause that prostrates her energies, and may yet realize the golden dreams which have stimulated her to compete with more favored cities in attaining both population and wealth. Sad experience has taught us that yellow fever is fatal to all trade in our city. Country customers, on whom all mercantile hope depends, are prevented from using the facilities that the city has provided for the convenience of travel, and fail to appear. Thus a double loss is effected; loss of sales and loss of transportation of passengers and return goods. Under such a series and multitude of small losses as may be enumerated, it is impossible for any city to increase; and Charleston, with her natural advantages, must yield, and continue to be a small town, so long as she mixes the commerce of the fatal West Indies with the commerce of the rest of the world, and thereby introduces into herself the seeds of her own destruction.

The absence of yellow fever during the summer of 1859, may prove as instructive as its presence in 1858, if the details are properly studied. The history is short but complete, and is resolved into the simple fact that no vessel arrived in our harbor with the disease on board. Its appearance in Cuba was later than usual; the ill-fated Isabel ceased to perform her accustomed voyages after the 28th of June, and very few other vessels arrived after the disease became epidemic in Cuba. During the months of July, August and September, but six arrivals from Cuban ports are reported by the Port Physician, and these were retained at Quarantine. We have no reason to know that they were infected; the probability is that they were not. They were not, however, allowed to come up to the city wharves. No case of fever came to the city, and hence no case was reported to have taken its origin in the city; no introduction, hence no propagation; no importation, hence no prevalence.

Exclusion of the disease is, then, the sole sure method of preserving health, and non-intercourse is the cheapest, surest and most certain mode of exclusion. We have seen that a protective embargo need affect a certain commerce only, and that for but a brief specified time. During the rest of the year the sugar trade might be carried on with sufficient activity to richly repay its agents and satisfy all the wants of the consumer. In pointing out the dangers of the intercourse, we have simply performed a duty to science and the community; it remains for the latter to provide those measures of public safety which the yearly peril of our lives and fortunes so urgently demands. To "the sober second thought of the people" we commend the serious consideration and impartial decision of this question.

author's views of the operation of mercury, and an attempt to deduce some general principles which may direct its exhibition in those diseases which are accompanied by fever.

A Reply to "Remarks on Certain Parts of an account of the Yellow, or Malignant Fever, as it occurred in the city of Philadelphia in 1820;" and some observations on "A Reply to the Remarks of J. on the Review of the Papers relating to the Fever in New-York in 1820," which were published in the 4th vol. American Medical Recorder, October, 1821. By SAMUEL JACKSON, M. D. Philadelphia.

The American Medical Recorder, for last October, contains two papers, in which I am assailed with a degree of rancour, that must appear strange, and be wholly unaccountable to those unacquainted with the feuds which have heretofore distracted the Medical Profession the city of New-York.

The observations that excited these bursts of passion, and that seem to have touched more deeply than was conceived possible, or even contemplated, were not intended to abet the designs of a party, or injure any individual. Their aim was much higher. Truth was their object; and in its pursuit, authorities wrongly quoted, and statements erroneous and unfounded, were unhesitatingly exposed, perfectly independent of any sentiment of personal animosity, or purpose to inflict a personal annoyance. If individual feelings have suffered, the circumstance should be imputed to its proper cause. Every medical disquisition should be conducted in that sober and unbiassed temper, that can alone render it of utility, or calculated to accomplish its only legitimate purpose—the establishment of truth. When it assumes a different character, and, more especially, when, from levity, rashness, prepossession, or other motives, a departure from the most

rigid observance of accuracy and correctness, in assertions and positions, is hazarded, it becomes a solemn public duty, that the delinquency should be pointed out, and animadverted on by some one. Preparing to submit my remarks on the malignant fever of 1820 to the public, although not as well qualified as many others to the task, yet it was not irrelevant to notice the inaccuracies of the "Discourse on Medical Police." This is the offence, that has awakened so much ire; and procured for my humble productions the distinction of having given rise to such passionate criticisms.

From a note, attached to one of the papers, to which I have alluded, Dr. Eberle, one of editors of the Recorder appears to have been conscious, that the personal allusions contained in that paper, are calculated to disgrace its author. To remove from himself every suspicion, that he could be guilty of the improprieties it contains, he disavows any participation in them; and indicates Dr. Ducachet, his co-editor, as the writer, to whom belonged, this evomition of venomd spleen.

The indecent personalities of this writer, are to be treated with contempt. Reputation for abusive writing, is cheaply obtained, by those, to whom it is an object of ambition. I have no desire to detract a particle from that, which Dr. Ducachet and his co-adjutant writer, have laboured so earnestly to merit, and of which they have shown themselves so worthy;—Let them enjoy it in the fullest fruition.

I disclaim the slightest disposition to lessen the just reputation of Dr. Hosack, or any other individual; but I have to learn, and cannot imagine, what are the circumstances that so elevate him above common mortals, that to question his infallibility, or examine his literary productions, is to be accounted a presumption, deserving to be overwhelmed with contumely and reproach. Dr. Ducachet should have reflected, that it was possible, the "distinguished man," who filled, in his imagination, so vast a space, might hold but

a moderate standing in the estimation of others. The beetle that circles with drowsy hum around the evening taper, dazzled with its glare, may imagine it a glorious luminary in the little world in which it exists. Though the declaration may appear inordinately arrogant to Dr. Ducachet, I can assure him, I have no apprehensions of being esteemed egregiously vain, should I engage in any contest with this "god of his idolatry."

"Victorque virūm volitare per ora."

My thanks are due for the quotation, and find in the triumph, but little to satisfy the cravings of a very moderate ambition.

Dr. Ducachet has taken the liberty to imagine my motives for the heinous crime of questioning Dr. Hosack's professional accuracy. He can take no offence, should I imitate his example.

Honest old Burton, with no little indignation, describes the company of parasites and flatterers, who, with immoderate praise, bombastic epithets, glossing titles, and false eulogium, so bedaub, applaud, and gild over, many an undeserving man, that they clap him quite out of his wits. Their hero is never in his proper character, but always appears in masquerade. "If he be a big man," says our quaint author, "then he is a Sampson, a Hercules; if he pronounce a speech, another Tully, a Demosthenes; if he can make verses a Homer, a Virgil;" and should any one laugh at these obstreperous claims, he is immediately, "a Zoilus carping at Homer's genius." We are here presented with a picture, for which a prototype might be found. But having somewhat more charity than the wrathful doctor, no use will be made of it; and his example and his motives, be permitted to rest with himself.

Dr. Hosack, I feel assured, has too much good sense to countenance these ridiculous pretensions that are made for him, or to quarrel with those who reject them. It might,

otherwise, be suspected, he had been "clapt out of his wits," and had adopted the vain boast of Ennius—

"Volito docta per ora virum."

The papers to which I have alluded, would have been earlier noticed, but for the engagements in which I had entangled myself at the period of their publication, and which occupied almost exclusively, my attention and time. During the winter I was employed in delivering a first course of lectures in the college of Apothecaries, which was prepared from day to day; and, consequently, enjoyed but few moments of leisure—I felt, besides, probably too indifferent on the subject. The inconsistencies, the sophistry, the unfair deductions of those writers are so glaring, that it appeared to me, they must strike the most casual reader. But I may be in error: few examine with attention, the matters contained in essays of the character of those published in the Recorder of last October, to which I have reference. Their allegations are too often admitted, especially if urged with boldness. It is therefore a duty, that I should substantiate all that I before advanced, and which these writers have denied; and repel the personal attacks, in which they have so freely indulged.

At my first leisure, I accordingly prepared an answer, intending to publish it in the Recorder. A suspicion never entered my mind, that I could possibly be denied the exercise of the same latitude of remark, and freedom of observation, provided I thought proper to use it, that had been employed towards myself, especially by one of its editors. It is obvious, that it is nearly impossible to rebuff arguments and allegations, intimately woven with rudeness and incivility, without the "retort courteous." Considering the provocation that had been given, my right, I conceive, was used with moderation. It is unpleasant, it must be admitted, for an editor to give publicity to his own scandal; but he should

take care not to place himself in the situation to deserve the exposure, or, by a refusal, to act with injustice.

Doctor Eberle, the editor of the Recorder, residing in this city, received my communication, intended for the April number, and put it to press. The proof was sent to his co-editor, Dr. Ducachet in New-York, the writer of the essay to which it was an answer. The proof was returned by him, with several erasures. The rejoinders to Dr. Ducachet's personal remarks, appeared to have been peculiarly offensive, as none escaped his censorial excision. As my communication was placed under editorial interdict, unless I submitted to this bare-faced injustice, it was withdrawn, rather than have it published in a mutilated condition. The editors of the New-York Medical Repository, immediately granted my request, for the admission of my replication on the pages of their valuable journal, and I am thus enabled, by their politeness, to defeat the littleness of the policy, that has dictated this unmanly conduct. The reasons that Dr. Ducachet may have assigned, for rejecting the passages on which he exercised his censorship, have not been made known to me. They could not have been, most certainly, an objection to the publication of personal allusions. The Recorder has not been remarked for its purity in this respect ; and they would come with too ill a grace from so notorious an offender as the New-York editor of the Recorder, to be tolerated.

A plain relation of the circumstances connected with this controversy, will more strongly picture the conduct of Dr. Ducachet, and elucidate its character, than any commentaries I can offer on it.

In the Recorder for April 1821, a review was published of the report of the New-York Medical Society, on the *Bancker-street fever*, to which was attached the initial letter B. The committee of the Medical Society, some of the most intelligent and distinguished of the profession in New-York. was

treated in this paper, with little ceremony and less delicacy. The subsequent number for July, contained a paper signed J. devoted to the discussion of a single point which had been made in the report of the Medical Society, was contested by the reviewer B, the correct determination of which, is of considerable interest and importance in a pathological view. The writer of B, was well known; but, as he chose not to declare himself openly, although under his disguise he did not spare others, his wish for privacy was respected. No personal allusion was made to him by J, whose remarks were confined to the subject-matter under examination and growing out of the review of B.

This paper called forth a reply, filled with petulant and angry invectives directed to me, as the author of the remarks of J. Dr. Eberle, as was mentioned before, seemed to feel so sensibly the indecency of this unprovoked attack, that he thought it necessary to disavow a participation in the personal allusions, and designated Dr. Ducachet, his brother editor, as the writer of the anonymous paper that contained them. Dr. Ducachet has, thus, in this first place, infringed that comity which every writer who respects himself in the opinions of others, will observe in a discussion of a scientific topic, by mingling with it personal reflections on an opposing writer; this offence becomes peculiarly flagrant when the discussion is anonymous. In the second place, he has violated the confidence reposed in him as an editor, by a correspondent, without the slightest provocation to justify the outrage. To point the climax that marks his conduct, he takes advantage of his editorial privilege to close his journal to the replication to his own attacks. I wish it to be understood, that it is not intended to object to, or to complain of the personal reflections contained in the papers the subject of these observations; of the editors of the Recorder, favours were neither expected nor asked: simple justice alone was looked for—that my right to reply through the

same medium to the aggression I had received, should not be opposed ; but in this reasonable expectation I have been deceived. The object of this short narrative, is merely to display the principle of Dr. Ducachet, and to explain the cause of my answer appearing in another journal, than the Recorder.

These prefatory observations have occupied a greater extent than was intended. I shall now, without further prelude, proceed to the consideration of the papers in question, examine into their character, expose the means both of defence and attack, that are employed in them ; and exhibit the just value of their pretensions to correctness, research, and information.

The first paper purports to be "Remarks on certain parts of an account of the Yellow or Malignant fever, &c." Its object is to defend the accuracy of Dr. Hosack's references and quotations, in his "Discourse on Medical Police," which I had impeached ; and to retort on myself, the allegations I had made against the late "Resident Physician for the city of New-York, Professor, &c."

As it regards the character and kind of defence, attempted in this paper, it is to be remarked, that the inconsistencies I pointed out in the "Discourse, &c." are unnoticed, and, consequently, are admitted to be accurate. Of the instances of "deceptive references, to authors for opinions, on subjects they do not treat, and for facts they do not mention," that were indicated ; while an effort is made to contest some of my charges, others are not controverted, and are of course also admitted to be true. Thus it results, that it is allowed, by the champion of the "Discourse on Medical Police," that Dr. Hosack has been inconsistent with his principles ; and has made some deceptive references. His defence then amounts simply to this : some of the references are not deceptions.

Had this writer confined himself to the proof of this position, so far as it could be yielded to him, by a candid examination of the authorities disputed, and a correct report of the passages in controversy; I should not have felt myself called upon to write another line on the subject. But he has acted otherwise; he has charged me with being guilty "of the very practices against which I inveighed." He has made it obligatory on me to establish the truth of my allegations, the perfect correctness of my quotations, the candour and justness of my deductions.

If, in doing this, the defence that has been attempted of the poor remnant of the "Discourse on Medical Police," and the puny endeavour at revenge, is shown most distinctly to be a mere mass of misrepresentation, quibbling and ignorance, though it may appear harsh, yet it is a proceeding that has been rendered, and I regret it is so, entirely unavoidable.

That this description is not overcharged, but true in every respect, will become manifest, in the detailed examination of the particular points contained in the "Remarks on certain parts of an account, &c." to which I now pass on.

The appeal made in the "Discourse on Medical Police," at pages 8 and 9 to the names of Huxham, Haygarth, Currie, Gregory, Ferriar, Percival, Blane, Chisholm, M'Gregor, Pym, Gilpin and Wright, in a manner to impress those not conversant with the writings of these authors, that they had been all perfectly familiar with Yellow Fever, treated of it in their works, and inculcated its contagion; I adduced as an instance of deceptious reference. What is the defence? I am accused of "misrepresenting the language of the Discourse on Medical Police." It is positively asserted that Dr. Hosack "is not speaking of Yellow Fever, but of contagion as appertaining to fevers in general." To sustain this assertion, part of the passage on which I animadverted, is quoted from the Medical Police. The fair admission of this defence is, that if Dr. Hosack is speaking of Yellow Fever,

when he refers to the distinguished physicians whose names are mentioned above, then is the reference deceptive. I will now show that he is speaking of Yellow Fever, as well as "of contagion as appertaining to fevers in general," notwithstanding the very positive denial, that is made to the contrary. I shall do this, by continuing the quotation of the writer of the "Remarks, &c." from the part at which he found it so very convenient to his purpose to close abruptly with an &c. This very handy &c. happens to cover the only part of the passage on which I animadverted, and in which Dr. Hosack is "speaking of Yellow Fever.

"Are the investigations and the accumulated experience of Huxham, Haygarth, Currie, Gregory, Ferriar, Percival, Blane, Chisholm, M'Gregor, Pym, Gilpin, Wright, and a host of others, to be prostrated by the arrogant assertions, the overweening conceits, and flippant remarks of those juniors in knowledge and in years, who have lately obtruded themselves upon the public attention? Although they do not merit a serious and laboured refutation of their mistaken views, it will be at least proper, under the various points which they consider at issue, to call their attention to those important facts, and those sources of information, with which they appear to be unacquainted, or which, in their eagerness to promulgate their effusions, they have totally disregarded. *With this view, I shall notice their lucubrations under the several heads in which they dissent from the truths that appear to have been established by the experience and observation of the distinguished physicians to whom I have already referred, (viz. Huxham, &c.)*

In the first place, they deny the peculiar character of yellow fever as distinct from the ordinary bilious and typhus fevers of our country."

This plain language admits of no misconstruction; Doctor Hosack *does* speak of yellow fever, in connexion with his references to the names of the "distinguished physicians," and it follows, that by the mouth of his defender, is his condemnation pronounced.

I do not hesitate to confess, that I was led astray by the loose, unphilosophical, and disorderly method of quoting authorities, as a cover to every sort of license which a writer

may choose to exercise with them, pursued in the Discourse of Medical Police, and mistook the Dr. Wright to whom reference was made. I inquired of several friends to ascertain who was this Dr. Wright, but ineffectually. I ransacked several extensive Medical Libraries for his works, but to no purpose. The truth is, it never, for a moment, occurred to me, that the writer of a few essays in a periodical work, would be associated with some of the standard authorities of the science, without a special reference to the work, containing the paper on which the appeal was authorised.

If it can afford to Dr. Hosack and his defender, the slightest satisfaction, to convict me of ignorance of Dr. Wright and his essays, I freely afford it to them. I plead guilty.—I will go further.—I put in the same plea with respect to some hundred other essayists, in the thousand volumes of Medical Periodical Literature, which the spirit of the age threatens to render interminable, of whose names and writings I have no knowledge.

The able defender of the Medical Police gravely informs his friends, that “Dr. William Wright of Jamaica, (why could not Dr. Hosack have been as particular), is known to every student of medicine, who reads his dispensatory, for his description of the *Cinchona Caribæa* and *Geoffrœa Inermis*.” If I understand the meaning intended to be conveyed by this observation, it is, that as Dr. Wright had given a description of the *Cinchona Caribæa* and *Geoffrœa Inermis*, he should have been known as an author on Yellow Fever. This is most admirable logic. The sequitur, an induction that admits of no refutation. I feel myself incapable of answering such an argument, but must cry mercy, and quietly submit to this irresistible proof, that I am an ignoramus!

The writer of the “Remarks, &c.” has placed beyond a doubt, the propriety of Dr. Hosack’s reference to Dr. William Wright, as a writer on Yellow Fever. But, in establishing this point, he contradicts his own positive assertion,

and destroys his own argument. He had just asseverated most peremptorily, as it then suited his object, that "Dr. Hosack does not assert, even by implication, that any of the writers referred to (Dr. William Wright one,) had seen yellow fever or treated of it in their writings. He is not speaking of yellow fever." Yet, in the succeeding paragraph, he furnishes the proof that Dr. H. is "speaking of yellow fever," by adducing the evidence, that in referring to Dr. Wright as authority in yellow fever, Dr. H. could not be charged with a "deceptive reference." Thus, like an unskilful engineer, whose works, disposed without judgment or system, batter down each other, this writer refutes his own arguments, and overturns his own statements.

While on this point, on which this "able writer," as he is styled by Mr. Coleman, (a profound judge) has exhausted his wit; there is one observation, intended to be so very sarcastic, I would not hurt his self-love so much, as to let him suppose it had been unfelt, by leaving it unnoticed.

Dr. Wright, I mentioned, had written a history of the Walcheren Remittent. A few pages preceding, I had asserted, that the writings of the authors quoted by Dr. Hosack (a Dr. Wright one of them), "are confined to diseases observed in England. It was supposed I had here committed a lapsus, that is pounced on with all the voracity of a vulture ravening its prey, in the expectation of finding food for malice.

"Without pretending," observes the writer of the remarks, in the least to call in question, his knowledge of geography, I would beg the Philadelphia President (biting sarcasm) to inform me, whether the Walcheren fever (remittent) occurred in England? This question, I by no means consider "impertinent," of which he expresses an apprehension. It has too much of simpleness in it, for so harsh an appellation; it is best answered by asking another. Does not Dr. Hosack contend, that yellow fever is an inter-tropical or West India

fever, and cannot be generated in New-York ; and does not this inquirer know, that Dr. Hosack has written on this West India fever as it occurred in New-York ? There is no difficulty to prevent the Walcheren remittent, from occurring and being observed in England. A few hours sail brings those whose systems are imbued with the exhalations of the Walcheren marshes into Great Britain, where the disease subsequently unfolds itself. This is not a hypothetical occurrence, but a well established fact.

Few medical readers have now to be informed, that the Walcheren fever occurred extensively in England, on the occasion of the memorable and disastrous operation of the English forces against Zealand. The following passage from Dr. Wright's History of the Walcheren Remittent, a work composed from the observation of the disease in Harwich Hospital, and not in Walcheren, is one, amongst numerous proofs that could be adduced. "For, healthy regiments, (as I have it from Dr. Patrick, an authority I must ever respect,) brought over without sickness from Walcheren, and quartered in Colchester, were universally seized with the continued remittent of Walcheren in its characteristic form, and the sequel was the same as at Walcheren and Harwich, so that no proof was wanting to ascertain their identity."* I hope this inquiring gentleman's "anxiety to become intimately acquainted with my novel views" on this subject, is now gratified.

As this gentleman professes an ardent desire to be made acquainted with novelties in geography as well as medicine, he may gratify his curiosity, by turning to page 19 of Dr. Hosack's Discourse, where he will find the novel information, that Naples and Palermo are inland towns. I should not have thought it necessary to have noticed this "novel view," but for the "exceeding anxiety he expresses to in-

* History of Walcheren Remittent, page 19.

form himself on such subjects," and the pleasure it gives me to enable him to indulge such very laudable desires.*

Having pointed out the deceptive reference of Dr. Hosack to Huxham, as authority on yellow fever, I selected a few quotations of the general principles of that most sound and accurate observer, to show their hostility to the views entertained by Dr. Hosack. The force and point of these quotations, are incontrovertible. They are all admitted, except one, to be the very reverse of the doctrines of Dr. Hosack. Yet from this single passage would the defender of the Medical Police boldly account for the conformity of Dr. Hosack's principles with those of Huxham, and the propriety of his reference to this great authority. But the doctrine contained in the passage I cited from Huxham, and which is more largely extracted by the writer of the remarks, has no resemblance to the opinions of Dr. Hosack. Huxham, in union with Hippocrates, ascribes to the depraved constitution of the air, the *causes* of most epidemic diseases. The influence of this constitution is so great, (it is the opinion of Huxham,) as to affect "the increase and duration, but not as in other epidemics, originate such as are properly stiled contagious." This is the doctrine of Huxham, that the writer of the "remarks" avers, is precisely the same as "the views of Dr. Hosack concerning the contagiousness of yellow fever." I am sure Dr. Hosack must have felt surprised at this discovery.

There is not a syllable in the writings of Dr. Hosack, in reference to the influence of "atmospheric constitutions," on the character and prevalence of epidemic diseases. "The views of Dr. Hosack on the contagiousness of yellow fever," are evidently different. An atmosphere vitiated by the de-

* This passage of the Discourse on Medical Police, is taken nearly verbatim from Elane's Elements of Medical Logic, page 150, though it is not acknowledged. The blunder, however, is Dr. Hosack's, and not Sir Gilbert's.

composition of vegetable and animal matter, he teaches, "lends wings to the emanations proceeding from the diseased body."* But has this puerile notion the slightest resemblance to the philosophic doctrine of "atmospheric constitutions," as illustrated by Hippocrates, Sydenham, Huxham, and Stoll? Who can form any definite and precise ideas from terms so vague and unphilosophical? Examine the expressions in every possible manner, and it will be found, that they really mean nothing.

Dr. Hosack, in the most positive terms, adduced Pringle as having "abundantly drawn the distinguishing characters of bilious and yellow fevers. I proved beyond the possibility of cavil or denial, that Pringle was a zealous opponent of the Professor's doctrine, and endeavoured, not to distinguish between, but to identify "the characters of bilious and yellow fevers." Here was another open, manifest, undeniable conviction on my charge of a deceptive reference. What course does Dr. Hosack's champion take in this instance? Does he, like an honest and candid inquirer in the great cause of truth, acknowledge and lament the error of his hero? No; like a true Swiss, he knows no other cause than that which employs him. He seeks to screen the author of the *Medical Police*, from this most palpable misrepresentation, by accusing me "of sophistical reasoning," in my observations on the reference to Lempriere. The object of Dr. Hosack in establishing the distinguishing characters of bilious and yellow fevers, was to give support to his favourite theory of the contagiousness of yellow fever. This was the sole intention of the *Discourse on Medical Police*. In quoting Lempriere, therefore, as an authority to prove the distinct characters of the two diseases, it was Dr. Hosack's duty, as a candid writer to acknowledge, that Lempriere did not consider contagion as a diagnostic of either.

* *Discourse on Medical Police*, page 26.

Although no positive assertion is made in the discourse, that Lempriere believed in the contagiousness of the disease, he calls the continued endemic or yellow fever; yet, the manner, in which he is quoted by Dr. Hosack, leads unavoidably to that inference. The context admits no other conclusion. It was to guard against this source of error, arising from the culpable omission by Dr. Hosack of an important circumstance, that I mentioned the particular opinion of Lempriere, so little calculated to support the theory, into the service of which it had been pressed. How is it possible, that the most captious, having the smallest regard to truth, can convert a plain proceeding like this, into sophistical reasoning? But, admitting, for the sake of argument, that my statement of Lempriere's opinion, was sophistical reasoning, by what "process of critical legerdemain," can this juggler cause it to make the positive proof of the deceptive reference to Pringle, "a baseless fabric of a vision?"

One of the most glaring instances of a deceptive reference to writings, for facts and opinions that are not contained in them, is the appeal made by Dr. Hosack to the diseases of Seamen, by Sir Gilbert Blane. I repeat, that not a single fact or observation, is to be found in that very excellent work, to justify the reference made to it. The defender of Dr. Hosack, has the hardihood to assert, "that the whole of this is nothing more than the creation of Dr. Jackson's heated imagination." He avers, "that Sir Gilbert Blane in this very work, relates one of the strongest facts ever adduced in support of the contagiousness of yellow fever;" "it is contained," he continues, "in a letter addressed to the Hon. Rufus King, then minister at the court of St. James." Now mark the frontless imposition, that is here attempted to be played on the reader. The work on the Diseases of Seamen was published in 1787; the letter addressed to Rufus King, is dated 1793; a difference of eleven years in the period of the publication of the two productions; besides, the

facts related in that letter, were only reported to Sir Gilbert, and are not his own. If Dr. Hosack's reference was to the letter to Rufus King, why did he not so state it? why did he particularize "the facts adduced in the diseases of Seamen?" Did it arise from his knowing that the relation of facts contained in that letter, had been invalidated, by the persevering researches of Dr. Bancroft? The letter to Rufus King may very probably be added, as an appendix to subsequent editions of the Diseases of Seamen, but this will not authorize a reference to the body of the work. The edition in my possession is the first, and I again reiterate, that there is not the slightest allusion to any occurrence, observed by Sir Gilbert, in the numerous fleet of which he was Physician General, in the West Indies, that appears to have even awakened his suspicion, that the disease was contagious. He has not been, I believe, in the West Indies since; or had an opportunity to acquire any additional experience from personal observation.

In the Discourse on Medical Police, Dr. Hosack lays down, as a position of important bearing, "that until the affirmative testimony contained in the writings of Dr. Chisholm, Dr. Wright, Sir James M'Gregor, Dr. Pym, and Sir Joseph Gilpin, &c. shall be disproved, the negative declarations of the late writers to whom I have referred, must be discredited." Those who have not investigated the question at issue, must have supposed from Dr. Hosack's statement, that the "affirmative testimony of Dr. Chisholm," &c. had never been disproved. I instanced this position of Dr. Hosack, not so much as a deceptious reference, as an attempt to deceive the uninformed. The affirmative testimony of Dr. Chisholm, is the most important of that of all the contagionists; it may, in reality, be considered, as constituting the basis on which the whole system of the contagion of yellow fever rests. It is not surprising, therefore, that Dr. Hosack lays so much stress on it; but the refutation of this "affirmative testimony," has been so complete and entire, and has proceeded from so

many sources of the highest authority ; even from those, whom Dr. Chisholm had cited as witnesses, that not a loop is left on which to hang a doubt. No one, who has devoted a small portion of time to the investigation of this subject, can be ignorant of this well-known circumstance ; and it is incredible, that it should have been unknown to Dr. Hosack. How then, could he, as a conscientious investigator of the truth, cite the "affirmative testimony of Dr. Chisholm," as having never been disproved, when he could not but have been aware, that not a single point of it remained unquestioned or unrefuted ?

The apologist and advocate of Dr. Hosack, with his accustomed aberration from correctness, founds his defence of this art of deception, by mistating Dr. Hosack's language and meaning. He asserts, that Dr. H. merely "adduced these writers, as having furnished affirmative testimony in favour of the contagiousness of yellow fever." This is an unfair representation of Dr. H's. assertion. The position taken by Dr. H. is, that "the affirmative testimony adduced" had never been "disproved ;" a point altogether different from that stated and defended by the advocate of the discourse on Medical Police. We might be led to suppose that the frequent mistatements of this writer, arose from an incapacity to comprehend the plainest language. Reflection must, however, convince, that such cannot be the case ; but, that the task he has undertaken is of so hopeless a character, no other course is left for him to pursue. With a generosity, that can scarcely be commended, though it is rare, he seems willing to share the fortune of his friend, and the conduct he can neither fairly justify nor defend, he will boldly imitate—

"Common the crime, then common be the pain."

In a virtuous cause, self devotion like this, constitutes the noblest character ; but, in a cause intrinsically bad, it only makes

"An artful manager, that creeps between
His friend and shame, to be a kind of screen."

But this writer is not willing to be considered as sophistical and erroneous only, he must be inconsistent and absurd. Dr. Chisholm's testimony on the contagion of yellow fever, consists principally of the romance of the ship Hankey, and the circumstances connected with her arrival at St. George's in Grenada ; all of which have been manifestly shown to be the mere coinage of his brain. Separate the story of the Hankey from Dr. Chisholm's proofs, of the contagion of yellow fever, and they become a nullity. The doctrine of the importation of yellow fever, from Bulam to Grenada in 1793, and thence to all the other West India Islands, and our continent, rests on the truth of this story. Destroy this foundation, and down goes the whole structure of contagion. Yet, this logical writer avers, that the overthrow of this groundwork of Dr. Chisholm's testimony, "is not fairly meeting it ; does not weaken or destroy its force ; is flying off from the subject matter of the dispute ; is mistaking one thing for another." This Quixotical mistake of mine, as he considers it, differs in one respect from the famous adventure of the renowned knight, to which it is facetiously compared : it produced more of anger than smiles, tears than laughter. Dr. Hosack and his friends, judging from the passion they are moved with, do not appear to consider it a joke. Nay, if Cervantes had made his hero guilty of no greater hallucinations, than such as taking Dr. Hosack for a wind-machine, instead of a giant, the world would have wanted many a hearty laugh, in the dull recital of sorry realities.

"The affirmative testimony" of Mr. Pym, which Dr. H. made of so much importance, as not having been disproved, is in the same predicament as that of Dr. Chisholm. I alleged, that part of it had been refuted by Dr. William Ferguson, and, as his system was built on the correctness of Dr. Chisholm's account of the origin of the Bulam fever, the testimony of both fell together. But, nearly the whole of the testimony of Dr. Pym, has been clearly and amply con-

troverted by Dr. Bancroft, in a late work, which my friend, Dr. Chervin, had in his possession, and which I hastily perused, while he was prosecuting his interesting and valuable researches in this city. I have not been able to meet with any other copy, or I might have it in my power to show what is the degree of credit to be attached to the Stoney Hill story. The advocate of Dr. Hosack, however, denies that "Mr. Pym builds his system upon the origin of yellow fever, on board the ship Hankey." I contend, that he does assign its origin, which involves the character of the disease, to its importation from Bulam by the Hankey, as related by Dr. Chisholm. Here we are it issue; let facts decide. The title alone of Mr. Pym's work, is sufficient to establish my position, and gives a flat contradiction to the assertion of my opponent. Mr. Pym's work is entitled "Observations on the Bulam fever, which has of late years prevailed in the West Indies, on the coast of America, at Gibraltar, and other parts of Spain." Does not this title page present an epitome of Dr. Chisholm's doctrine; which is, that the yellow fever was imported by the Hankey from Bulam, into the West Indies, whence it was carried to America, and communicated to Spain, &c. But Mr. Pym settles the question himself, by defining his meaning of Bulam fever, viz. "Bulam fever, a contagious disease of foreign origin, and supposed to have been imported from the coast of Africa," page 4. He is still more explicit. At page 199, the following observation will be found in a parenthesis; "without any reference to the introduction of the disease into Grenada, as mentioned by Dr. Chisholm." The extract of his letter to Sir Richard Keates leaves no doubt, as to the correctness of my assertion, and the unfounded, though bold declaration of my accuser: "In my opinion, the fever, which prevails on board the transports from Carthagena, is the contagious fever of the West Indies, known by the name of the Bulam fever, from its having been imported from that settlement to the island of

Grenada, in the year 1793." It is the same disease which prevailed in Spain in the years 1800 and 1803, and at Gibraltar in 1804," page 236.

Notwithstanding this plain and positive avowal of his belief by Dr. Pym, the defender of Dr. Hosack, who pretends to doubt, whether I had read Mr. Pym's work, and must of course be familiar with it himself, denies that Mr. Pym builds his system upon the story of Dr. Chisholm. Of whom else does he get the name of Bulam Fever? Of whom else does he derive its importation from Africa? That the opinions of Mr. Pym are precisely as I stated them; after this exposition, it might be supposed the most daring would hardly deny. Now, of what value is the "affirmative testimony" of Mr. Pym, who makes the disease, that has afflicted the different cities of our continent, Gibraltar, and various cities of Spain, to be derived from Bulam, where no such disease has been known; and to have been imported from that settlement, when no such importation can be established? Thus is this vaunted "affirmative testimony" overturned by the positive contradictions of Drs. Ferguson and Bancroft, and falls into ruins of itself from the sandy nature of its foundation.

I know not whether the numerous egregious errors, and dashing groundless assertions of this writer, are attributable to a flippant ignorance, or perverse malversation. Painful as it is to see any individual with pretensions to respectability, and powers to make himself esteemed and respected, place himself in the predicament of being hung on either of the horns of so worrying a dilemma, it becomes unavoidable, from the nature of the attack made on me, and the defence which I must employ.

The reference made by Dr. Hosack to Diemerbrock, Rondeletius, Clavigero, and Howard, in order to prove, that animal matter in a state of putrefaction "will not generate *pestilential fever*," I instanced as strong proofs of the inaccurate reference to authors, for opinions and facts not contained in their writings.

I was fully persuaded, that Dr. Hosack had not read either Diemerbrock or Rondeletius, when he cited them as testimony, with so much confidence, and, that he had been led into the error he committed, by a careless perusal of Dr. Ferriar's paper, on the "Origin of Contagious and New Diseases." For the information of Dr. Hosack, with a view to guard him against a repetition of the blunder, I stated concisely the particular opinions of Diemerbrock, which I sustained by quotations from his work. The Belgian philosopher distinguishes between plague "*pestis*," and pestilential and malignant fevers—"febres pestilentes"—"*febres malignæ*." The first, "*pestis*," does not result from natural causes, but proceeds immediately from the most just anger of God, "*justissima summi Dei ira*," for the sins of men. Dr. Ferriar's essay could have furnished this information, had it been read with attention. "Diemerbrock, Dr. Willis, and some other eminent medical writers of the last century, supposed the *plague* to be *always an affliction from the Deity*."* It is to support this opinion, that Diemerbrock mentions the fact, that animal matter in putrefaction, will not generate *plague*, although pestilential fever is not an unusual consequence. It is this last circumstance, that gives the point to the argument of Diemerbrock, which would be futile in the extreme, with the interpretation of Dr. Hosack, and his obstreperous advocate. The expressions of Diemerbrock, are "*nulla tamen pestis insecuta est*:" "*nulla peste subsequente*"—no *plague* succeeded—no *plague* followed. The word "*pestis*," is used by Diemerbrock to designate the plague. In no instance does he employ it as meaning pestilential fever.—"*Febris pestilens*," is the phrase with which he uniformly expresses himself, when speaking of pestilential fever—a distinct disease, as he considers, from the plague.

* Medical History and Reflections, first American edition, page 119

The very next sentence to the quotations of Dr. Ferriar, copied by the writer of the Remarks, is conclusive, as to the truth and correctness of this representation of Diemerbrock's views; while the whole of the concluding part of the paragraph, is hostile to the theory of Dr. Ferriar, which shows, that, even that respectable writer had not, with perfect fairness and candour, quoted his authority. "*Si aliquando,*" is the language of the sentence succeeding the quotation of Dr. Ferriar: "*ex fœdâ cadaverum putredine aliqui morbi oriantur, illi vel erunt putridi simpliciter vel putridi maligni ac pestilentes privati, non autem vera pestis. Liquet id ex historiâ Paræi citatâ, qui ex cadaveribus in puteum projectis inquit multos tanquam peste interiisse; non dixit simpliciter peste, sed tanquam peste, id est, morbo tali quem propter malignitatem assimilat pesti.*"* No pertinacious cavilling, can invalidate the force of these expressions, and they must put to shame the bold animadverter, who with the most perfect assurance pretends to speak of the opinions and doctrines of a writer, whose works he has never seen.

It is easily to be perceived how Dr. Hosack has been led into his error by mistaking Dr. Ferriar's theory, for Diemerbrock's opinion, in consequence of his ignorance of the works of this last author. Dr. Ferriar observes, "*it is unnecessary to mention some of the principal theories relating to the rise of plague and pestilential fever. I place these together, for I apprehend the plague to be a fever, attended with some unusual symptoms, chiefly produced by its violence.*"† This opinion Dr. F. formed, he says, principally from Diemerbrock's cases; but it is his own view, and not that of the Belgian physician. Had Dr. Hosack cited Dr. Ferriar as the authority, he would have been perfectly cor-

* De Peste Caput, viii. Problema iv—4.

† Medical Histories and Reflections, American edition, page 118.

rect, but to display his erudition, he quoted Diemerbrock, who is directly opposed to him.

That Diemerbrock was decidedly of opinion, that animal matter in a state of putrefaction did generate pestilential fevers, the several passages I referred to in his work, "*De Peste*," must have satisfied the most prejudiced. The facts he mentions are positive; his language unequivocal—"putridos fœdores *semper febres pestilentes* inducere et experientia docet." Can words be more explicit? The references and quotations I selected are unimpeached by the reviewer of my essay, yet, thus admitting their correctness, with this perspicuous language in which Diemerbrock delivers his opinions placed before him, he has the audacity to deny that such are Diemerbrock's doctrines.

The gross errors and misstatements of the defender of Dr. Hosack, as it respects the sentiments and doctrine of Diemerbrock, I should be charitably disposed to believe, were the result of his acknowledged ignorance of the work, of whose contents he speaks so confidently; and his miscomprehension of Dr. Ferriar. But what apology can we frame to excuse, or what plea imagine to explain his tergiversation as regards Rondeletius; and the object of Dr. Ferriar's citation of this author: both of which are mistated, with an obstinate perversity. Dr. Hosack is the only person, who ever thought of mentioning Rondeletius, as an authority to prove, that animal matter in a state of putrefaction, would not generate pestilential fevers. Rondeletius, in no part of his works, expresses an opinion on the subject, and the only fact he mentions, that has a relation to it, proves the reverse. The quotation was given in my essay, and need not be repeated, especially as it is not challenged by my reviewer.

Dr. Ferriar, when discussing a question entirely different, viz. the power of a dead body to communicate *infection*, cites Rondeletius to prove, that it cannot. The language of Dr. F. is too clear to admit of any misapprehension. "Another

question, connected with this (whether contagion assimilates all the fluids to its own nature) and illustrative of it, is, whether the dead body of a person destroyed by a plague or fever, be capable of communicating infection. On this subject facts are wanting. Rondeletius (as quoted by Senertus) asserted that he had dissected bodies dead of the plague, in the presence of many of his pupils with perfect safety. * But let Rondeletius speak for himself. "*Quare corpora illa mortuorum, quæ amplius non expirant nullum venenum ejaculantur. Quod si aliquid contrahatur, hoc potius ab eorum pannis contrahitur; quam ullâ re aliâ. Si quidem dissecuimus aliquando corpora mortuorum ex peste, multis spectantibus studiosis sine aliquo damno; propterea quod mortuo animali perit omne venenum.*" From some extraordinary inadvertence, Dr. Hosack evidently misunderstood the passage that has just been extracted from Dr. Ferriar's essay, and quoted Rondeletius in his discourse on Medical Police, as an authority in support of his position "that animal matter will not generate pestilential fevers." The error was pointed out in my essay, the entire irrelativeness of the observation of Dr. Ferriar, as well as of Rondeletius, to the subject that Dr. Hosack was discussing, was shown. A single glance at Ferriar, must make the correctness of my remarks manifest to the dullest capacity. What is the course pursued by our veracious reviewer? He insists that the fact mentioned by Rondeletius is demonstrative that animal matter will not generate pestilential fevers, because dissecting a body recently dead of the plague the contagion of plague was not communicated by it. But he goes further. He avers, that Ferriar viewed the testimony of Rondeletius in the light that Dr. Hosack had placed it, and quoted it to show, that animal matter in a state of putrefac-

* Medical Histories and Reflections, American Edition. Page 124.

tion will not generate pestilential fevers." Now mark the deliberate deception practised. The only passage of Dr. Ferriar's essay, in which Rondeletius is mentioned, is the one that has been given above. But instead of quoting this passage, to sustain his solemn asseveration, he extracts a passage from another part of Dr. Ferriar's essay, in which Rondeletius is neither mentioned nor alluded to, and where a subject is treated wholly different from that, to support which he appeals to the evidence of that writer.

A deception precisely of the same character, as that which has been exposed in the instance of Rondeletius, is practised with respect to Howard's testimony. An observation of the distinguished philanthropist to show that the contagion of plague," is not communicated when the corpse is cold, of a person dead of plague," is perverted, by Dr. Hosack's partisan, to mean that animal matter will not generate pestilential fevers." The note which the reviewer transcribes from the work on Lazarettos, will bear no other interpretation than that I have given to it, but the text to which it is connected rendered the intention of the author more explicit. "It is by these ideas of the communication of the plague that the foregoing rules have been suggested." *

It is lamentable to behold such a *felo-de-se* of character on so trifling an occasion. This writer seems as though scorning every species of management, by which his reputation might be covered, he would throw off all reserve, and bare his forehead to the brand of shame.

One more authority remains to be examined, and this disgusting exposition of quibbling sophistry, and misrepresentation is terminated. Clavigero as well as Diemerbrock and Rondeletius with the appearance of great erudition and laboured research, was quoted by Dr. Hossack, as an author, whose work he had consulted. It now appears that this writer,

* Dr. Howard on Lazarettos. Page 25.

and I presume Herrera also, was known to him, as well as the other authorities, only at second hand. On examining this writer to test the correctness of the reference made to his publication, I found nothing to justify it, but facts chiefly opposed to the doctrine of Dr. Hosack. How is this answered? by appealing to the truth of the extracts, I made from Clavigero, or an attempt to point out their incongruence to the subject for which I produced them? Not a word is said in opposition to the accuracy of my quotation, or to lessen the overwhelming force with which they prostrate the reference of Dr. Hosack to the history of Mexico." To meet the positive testimony I adduced from the work of Clavigero, a negative fact is produced which had been employed by Dr. Chisholm for some object, in some of his works into which I feel no necessity of inquiring, as negative evidence cannot be admitted to possess the slightest weight opposed to testimony of the most positive character.

I have now completed this part of the task that has been imposed on me, by the necessity of self vindication. It has been by no means a grateful employment. I possess not that species of taste, which derives a gratification in displaying and contemplating the "human form divine" blurred with deformity. Infinitely more ungracious has it proved to my feelings, though in the strict performance of duty; to make bare this picture of moral disfiguration. The charitably disposed reviewer, in borrowing the language of Junius fancies, that he becomes clothed with the powers of vindictive vengeance with which that eloquent but uncandid and often malignant writer was so liberally endowed, and which he so often unsparingly exercised; but the borrowed tinsel can impart no sharpness to the leaden dart. The bed of torture "he prepared with so much complacency, I am afraid, he is doomed himself to occupy. If not callous to every emotion of shame, the public exposure, he has called down on his head must awaken a keen sense of shame and

give birth to the deepest regrets. Let him employ the severe lesson he has received to its proper purpose, and learn, that no circumstances can justify or palliate, especially in a Medical writer, the slightest deviation from the most religious adherence to candor and truth.

I am perfectly sensible that the subject of this discussion is of little moment. The knowledge that consists in an acquaintance with the opinions of writers, is of the lowest species :* although it is that, which, carrying with it all the weight of erudition, most frequently imposes on the judgment of mankind. Dr. Hosack attempted in his "Discourse on Medical Police," a liberal display of this kind of learning. It made no inconsiderable impression on the public, spread before it through every medium, and on a subject, the correct decision of which, involves its highest interests. A slight acquaintance with some of the writers, to whom Dr. Hosack so confidently referred, rendered me conscious of very extraordinary and important inaccuracies that he had committed. Engaged in the same discussion, I thought it my duty to correct them. This measure has occasioned me to be assailed with a most intemperate spirit. All my statements are contradicted ; I am charged with having never seen the works, from which I made extracts, which of course must have been fabricated by me ; with having misrepresented the sentiments of writers, and descended to the mean arts of sophistry and evasion. To repel these injurious aspersions, that, "lost in the labyrinth of their fury," my antagonists have sought to cast on me ; this idle and tedious discussion, for such I fear it will be thought by those not immediately interested in it, was rendered necessary. If it be of any consequence to have determined who are the guilty, and by whom deception has been practised, the facts and authorities are now so am-

* This sentence must be understood with some limitation, and is only true when it is used for the purpose of erudite parade. Ed.

ply spread out, as to enable every one to form his own conclusions, independent of any cavils and angry comments.

Having disposed of the "Remarks on Certain Parts of 'An Account of the Yellow or Malignant Fever, &c. &c.'" there remain to be examined, tested, and justly valued, the pretensions, arguments, knowledge, accuracy, and truth, of Dr. Ducachet's "Reply to the remarks of J. &c."

The passages of the remarks of J, that touched acutely this gentleman's sensitive faculties, stirred into a ferment the bile of his *meek* disposition, so that, without offending him personally, he has made me the object of his petulant invectives and injurious detractions; why? I am at a loss to divine. But, feeling, and acknowledging the obligation he has laid on me, I would not, that he should deem me forgetful of it, by not returning, to the extent of my poor ability, the debt most deservedly his due.

Was it necessary, however, that I should track, step by step, as in the preceding examination, the doubles of his course, I might be deterred from the labour, disgusted already with its loathsomeness. Happily the unpleasant task is spared me. Without threading the wiles and shifts of an experienced cunning, I shall break his cover, and placing in full view, the varied artifices, skilfully contrived to deceive, strip him of their resource.

Dr. Ducachet's essay purports to be "A Reply to Remarks of J, on the Review of the papers relating to the Fever in New-York, in 1820." To ascertain the relevancy of his statements and arguments, it is proper to determine what are the remarks, which Dr. Ducachet pretends to answer and refute.

The committee of the New-York Medical Society, in a "Report explanatory of the causes and character of the Epidemic Fever, which prevailed in Bancker-street, &c." offered three essential characters. as designating Typhus Fever. The 1st was, that medical writers apprise us that typhus dis-

appears in warm weather ; and that it is most prevalent during cold weather, more particularly if accompanied by humidity of the atmosphere : 2d. that the young and robust are the least liable to its attacks, but the old and debilitated are its most general subjects : and, 3d. that it is unexceptionably a fever of continued type, and of protracted and uncertain stages.

This Report was reviewed in the Medical Recorder for April, 1821, by B, who particularly selected these diagnostics as the subject of his animadversion. The first position he contested, and declared himself entirely ignorant of the writers, who, according to the committee, inform us, that "typhus disappears in warm weather, and is most prevalent during cold weather, more particularly if accompanied by humidity of the atmosphere." Proclaiming his ignorance on this subject, he solicits to be enlightened. The 2d. position of the committee, B admits to be correct ; and the 3d. he meets with cavils and exceptions, instead of argumentation or general observations.

The avowal made by the reviewer of his total unacquaintance with any medical writers, who entertain the opinion attributed to them by the committee of the New-York Medical Society, appeared of the most extraordinary character. This ignorance, whether real, from a limited acquaintance with medical writers, or feigned, for the purpose of sustaining an argument ; equally disqualified him for the office he had assumed. If he truly had not, in the course of his medical readings, met with the writings alluded to by the committee, instead of presuming to criticise the performance of others, he should have been engaged in his studies, and been laying the foundation of his medical information. If his disavowal of a knowledge of these writers was false, then is the character of all his observations vitiated, prostrated in the mire, and stripped of every title to credence or respect. Crediting his declaration of an absolute ignorance in this respect, and the

zincerity of the desire expressed, to be informed, "who the 'medical writers' are, that gave the committee this wonderful information," that information was communicated to him by J. It appears to have been received by B. as it was intended, in a friendly way, for he has not thought it necessary to make any observations in reply. He has no doubt profited by the instruction. Why Dr. Ducachet has thought it necessary to feel himself aggrieved, is quite incomprehensible. Dr. D. asserts, that I "*accused* the reviewer of being ignorant of one of the commonest and best established facts in medicine." This is not the only instance, in which Dr. D. violates the truth. It was the reviewer who proclaimed his own ignorance, and I did no more, than believe what B. said of himself. It is not J, but Dr. Ducachet, that insults the reviewer, by refusing credit to his words; and he does this under the mask of friendship.

That the authorities cited by J, established in the most incontrovertible manner, the point for which he adduced them, viz. to support the first position of the committee of the New-York Medical Society, that there are "*medical writers* that apprise us that typhus disappears in warm weather," &c. is beyond the reach of cavilling captiousness, or crooked prejudice. Dr. Ducachet, by the disingenuousness of his conduct, shows it in the strongest light: he undertakes to controvert the correctness of J's references, but, instead of honourably and manfully meeting the question; by an artifice that would be esteemed disgraceful in the meanest disputant of a tavern forum; he distorts and mistates the point in controversy, in order that he may be able to frame an argument, and find a plausible excuse to give vent to malignant passion, and indulge the disposition to detraction, that forms so conspicuous a portion of his elaborate essay.

A reference to the Remarks of J., will convince any candid mind, that the only intention of the writer, in quoting his authorities. was to demonstrate to the reviewer B. that there

were "medical writers, who apprise us that typhus disappears in warm weather, &c." The establishment of this fact, and the confession of an ignorance of such writers by B, was conclusive evidence of his incapacity for the task he had undertaken. Dr. Ducachet finding the subject placed by J. in a position that was impregnable, resorts to the pitiful evasion I have mentioned, on which he no doubt prides himself, as an admirable ruse de guerre; and makes a new question, viz. "that Dr. Jackson is bound to show that typhus never prevails in warm weather," examines the authorities as to their bearing, not on the point for which they are cited by J. but on his interpolated question; and then accuses me of deceit, because *all* of the authorities do not prove to the fullest extent, "that typhus *never* appears in hot weather." Practising this duplicity, Dr. Ducachet dares to talk of honesty!!

In my account of the malignant or yellow fever, in Philadelphia, in the year 1820, I stated as a diagnostic of typhus, "that it never does appear *epidemically* in hot weather, and ceases on the approach of cold." I have no hesitation in admitting, that the position as laid down, is too general; that it does not apply uniformly to the variable climate of England, or some other temperate climates equally marked by versatility. But, it is apparent from the context, that J. was alluding to typhus in this country, and not in cold, moist climates. As it respects this country, where the thermometer averages from 78 to 83° during the summer, I hold the observation to be incontrovertible, as well with respect to other climates of an equal or greater temperature. Had it been my object to have supported the position, "that typhus never appears epidemically in the hot weather of this country, or of warmer climates, as Dr. Ducachet would have it that I was bound to do, (why? it is impossible to conceive), different authorities and arguments would have been resorted to.

In that case, I should have undertaken to have shown, that genuine contagious typhus, the disease to which the name is given by Cullen, and to which it should be strictly confined, is absolutely unknown in the hot summers of this country. I should have shown, that under the denomination of typhus, in this country, and it may be added in the West Indies; are vaguely included several species of fevers, such as the gastric gastro-enteritic; the mucous fever, *febris pituitosa* of Stoll, *adéno-méningée* of Pinel; the slow nervous fever and others, are all, without the least discrimination, classed as typhus, especially complicated, as they so frequently are, with an adynamic state of the system. In these instances, the type of the disease or state of the system, is confounded with the diagnostic symptoms—the accident is taken for the essence. I would have established by indubitable authorities, that in Africa, in India, throughout a large extent of Asia, countries including a population of from 2 to 300,000,000, under the most favourable circumstances of filth and confined situations, crowded with human beings, *that fever is unknown*; and when carried thither, cannot be propagated. While on this subject, without entering at large into its discussion, a single observation of a most competent authority may be cited.

“Before dismissing the subject of fever, I may observe, that no well-marked case of typhus occurred to us in Egypt. In India we never saw a case of this species of fever. To the existence of this fever, which in Europe has committed such havoc in our fleets and armies, the *climate of India is inimical*. We know instances where, in transports, typhus had broke out, and, on the passage to the Cape of Good Hope or India, had proved little less destructive than the plague could have done; but the disease never reached India. If a case was landed there, it never propagated the contagion: a second case never appeared on shore. On inquiry, I found that no case had ever been known on the wes-

tern side of the peninsula, nor have I ever heard of its existence in the eastern." *

Dr. Ducachet was not contented with resorting to the deceptious practice I have exposed, but he also attempts a similar imposition in individual instances. Sir Gilbert Blane prides himself, as having been the first, who noticed the fact, that "there is something in tropical climates unfavourable to the production and continuance of infectious fevers." † Dr. Ducachet has not the hardihood to deny openly, the correctness of the quotations I made from Sir Gilbert Blane's work. The first and third quotations are as positive of his belief, of the effect of a warm climate in destroying typhus, as can be expressed in the English language. Dr. Ducachet does not pretend to controvert this accuracy; he passes them by without notice, although embracing the main and important part of the question, and only notices *six words* of the second quotation, and those but correlative, as though they constituted the only quotation, and the only opinion for which Sir Gilbert was referred to. And yet, Dr. Ducachet has the face to pretend to honesty as a controvertist!!

But this is not the only deception practised with regard to this writer. Dr. Ducachet asserts, that "in his observations on the diseases of Seamen, he (Sir Gilbert) tells us of the existence of a low ship fever on board of two vessels on the West India station, in the June of 1780." By referring to the "Observations on the Diseases of Seamen," it will be found, that Dr. Ducachet has grossly misrepresented the observation of Sir Gilbert. The words are, "The fever in these two ships *resembled rather* the low ship fever of Europe, than the bilious one peculiar to the climate." ‡ And Dr. Ducachet is an honest man!

* McGregors Medical Sketches of the expedition to Egypt from India, page 169.

† Observations on diseases of Seamen, edit 1785. p. 287.

‡ Observations to edition 1785, page 30.

Other misstatements, were it necessary, would be exposed, but they would swell this communication, already too extended to an unwarrantable size.

“ *Crimine ab uno, disce omnes.*”

The disingenuous proceeding of Dr. Ducachet, in misstating the arguments of J. and the sophistry of which he is guilty by replying to those misstatements, as though they had proceeded from me, and testing the accuracy of the authorities quoted, by the same standard ; have been amply exposed.

It is deemed quite unnecessary to occupy any additional space, in illustrating the adaptation of the references to the points, intended to be established by them. It is conceived, that they are not invalidated in a single circumstance, by the cavil and objections brought against them by Dr. Ducachet, which are evidently the result of a want of extended and general information, as to the diagnostic symptoms of the different febrile affections.

The utter impossibility of ever arriving at truth in any discussion, without employing terms in a certain and defined sense, is too obvious a principle to require an argument for its support. To avoid the errors and misconceptions arising from the use of terms in a loose, general, and different meaning, two positions were laid down by J. The first was, that there is a disease answering completely to the definition that Cullen gives of Typhus, of which contagion is an essential attribute. The term typhus having been bestowed on this disease, and universally adopted, should be confined to it exclusively. The second was, that diseases will often assume various types without losing their specific characters. Thus gastric, mucous, yellow, slow, nervous, and other fevers, will appear with a typhoid or adynamic, or an ataxique type. It is common to mistake fevers with these complications for typhus, though they are very distinct. The following extract from “*Medical Sketches*” of Mr. James M‘Gregor, presents a striking example of the various types that are

sometimes witnessed in a single disease. "In the Indian army, when the disease (plague) first broke out, the cases sent from the crowded hospitals of the 61st and 88th regiments, were from the commencement attended with the typhoid or low symptoms.

The cases sent from the Bengal volunteer battalion, and from the other corps, when the army was encamped near the marshy ground at El Hammed, were all of the intermittent or remittent type.

The cases which occurred in the cold rainy months of December and January, had much of the inflammatory diathesis. Mr. A. Whyte remarked, that every case admitted into the hospital at Rahamania, had the symptoms of pneumonia.

In the end of the season, at Cairo, Ghiza, Boular, and on crossing the isthmus of Suez, the disease wore the form of a mild continued fever." *

In all these instances, the plague never lost its distinctive character, though presenting so many aspects or types. Similar observations have been repeatedly made in other diseases. Dysentery will be sometimes attended with a highly inflammatory diathesis, and require actual depletion; at other times, it is accompanied with a typhoid or adynamic state, and demands a totally different management. Even the symptomatic fever, succeeding upon large wounds, especially gun-shot wounds, is frequently of a typhoid character.

The principles that have been stated, were laid down by J, to anticipate and obviate the objections and arguments that are employed by Dr. Ducachet. Those principles he has not pretended to controvert; yet heedless of these distinctions, that are sustained on the highest authorities in medicine, in a most strange confusion, he jumbles together fevers that are totally distinct. If an author employ the term typhus, though the symptoms described demonstrate the disease to have been gastric, slow nervous, mucous, or other fever com-

* Medical Sketches of the Expedition to Egypt from India, page 3—112.

plicated with an adynamic or ataxique state of the system, or, as it is in this country termed, typhoid type, it is seized on with avidity. If the author gives another name than typhus, as Hillary does to the fever of which he treats, Dr. Ducachet insists it is typhus, and typhus it shall be, whether the symptoms correspond to that disease or not. By this most ingenious manœuvre, as the candid Doctor no doubt thinks it is, he creates typhus, whenever and wherever it will suit his argument. But, dexterous as is the stratagem, the liberality with which he has employed it, and the monstrous incongruities of which it is productive, entirely destroys the effect it was intended to accomplish. No one is deceived, unless it be the Doctor himself; while his reputation as a medical observer, as a physician versed in the elements of his profession, and capable of distinguishing the discriminative features of different febrile diseases, without which, no one merits the character of a physician; is implicated by his own art—is sacrificed to the petty artifices of a controvertist.

The pyretology of Dr. Ducachet, appears like that of De Haen, to consist of but two fevers. A fever without acute inflammation, is, with him, typhus. Thus, the slow nervous fever described by Hillary, ("known to be" such, and not typhus, "from the description he gives of it," by all who are acquainted with the characters of the two diseases); the fever mentioned by Lind, as "*approaching nearest to what is called a nervous fever;*" the slow nervous fever of Huxham, *febris mucosa*—*adeno-méningée* of Pinel; the gastric fever of our summers and autumn, complicated with adynamic symptoms, so frequently described by Dr. Gallup, it is true, under the name of typhus; the same disease in the Philadelphia almshouse in 1820, described by Dr. Joseph Klapp—all these, and other fevers of different characters; of species wholly distinct; by the sinister management of Dr. Ducachet, are in utter confusion, heaped together, and confounded with ty-

phus. He breaks down, through an irreverent vanity, or unskilful ignorance, the ancient land marks of the science, consecrated from the earliest period, by all that is revered and esteemed in medicine, for genius, experience, observation, and truth. The beautiful harmony, and exact disposition, that now manifest themselves in the classification of diseases, through the prevailing influence of an analytical observation in medicine, would be dispersed, and "chaos come again," could the legerdemain tricks of the "Reply" of Dr. Ducachet possess an influence, equal in their magic to their pretensions. Devoid all discrimination, the various species of fever have lost, in their levelling system, their peculiar characteristics—"nulli sua forma manebat."

With a view to prop the most pitiful of all cavils, resting on a want of discrimination of the terms typhus and typhoid, Dr. Ducachet most pertinaciously insists, "they are absolutely synonymous." Nay he is bold to affirm, that "no author of established repute in medicine, recognises the difference contended for by Dr. Jackson." Notwithstanding this bold affirmation, a few lines subsequent, he "grants, indeed, that," typhoid, "when used by medical writers, is seldom intended to designate typhus fever itself, but rather some disease in which the fever is of a typhus character"!!! Can any thing be so ridiculous as the bold affirmation, and this palpable contradiction of it, jumbled together in the space of a few lines. Dr. Ducachet, amongst the rest of his honours, appears ambitious of adding the cap and bells. The prize will be accorded to him without contest.

After so many centuries of fruitless observation, on the ever fluctuating ocean of undefined terms, of idle opinions, of unmeaning words, and conjectural opinions; the introduction of sound philosophy into medicine, has placed the science on the immoveable basis of observation and experience.

At this day, when clearness, precision, and order, are esteemed essential requisites of the science. the inexact and

inaccurate views of fevers, displayed throughout the laboured essay of Dr. Ducachet; his total want of discrimination between things of a distinct nature; his practical efforts to prolong the disgraceful era of confusion and discordancy, too long lamented; and his abortive attempt to justify a loose and negligent employment of terms, cannot be tolerated. He places himself under the censure of every medical philosopher, and friend to the advancement of truth. The practice is justly condemned, and its object properly designated, by the enlightened and profound author of the "*Nosographie Philosophique*," with whose expressive and appropriate language these observations will be closed. "*C'est une heureuse ressource pour un esprit peu exact et peu propre à mettre de la justesse dans les expressions, que l'usage de certains termes d'une signification indéterminée, et qu'on peut employer à tout propos sans crainte d'être trouvé en défaut.*"*

Note.—I should not have felt justified in introducing the name of Dr. Ducachet into the discussion, but for the circumstances already related. I conceive, that, by his conduct, he has outlawed himself, and is not entitled to the observance of those rules of literary courtesy, I ever wish to obey. A question of science can be discussed, without any mixture of personal reflections. When the discussion is anonymous, the obligation to abstain from them is more binding. Without the slightest offence having been offered to Dr. Ducachet, he assailed me with a degree of rudeness, violence, and even maliciousness, for which it would not be possible to account, had not others, respectable for their age and standing in the profession, been equally the object of his coarseness. The law of retaliation, I hold to be as necessary to preserve decorum in the republic of letters, as of manners in society. It is a duty to visit this law on the disturbers of either community; and, if there is exhibited a harshness in some of my remarks, that, in other circumstances, would be unbecoming, my apology must be, that it was the discharge of a painful duty, in return for an unprovoked and wanton outrage.

* Vol. 1st. page 186.

*Remarks on the Epidemic of this State, in a Letter from
Dr. Daniel Hudson, dated Geneva, January 12th, 1813.*

THE pestilential epidemic, which has for some time past been raging on the Niagara frontier, is now making its appearance in our neighbourhood, and seems to have excited some alarm, from a belief that it is of a contagious character. I have been requested to give a short description of the nature of this disease, with a view to quiet fears which are altogether groundless. Having been constantly employed in cases of this destructive malady, from its commencement at Niagara, I am, from actual experience, enabled to assert that it is not of that class of diseases which may be communicated by contagion.

The cold humid state of the atmosphere, for some months past, has, no doubt, been a powerful agent in producing a predisposition to pestilential and inflammatory diseases. In addition to this, our unfortunate army has been unavoidably exposed to hardships, fatigues, and privations, which are incident to a campaign at a late season of the year, and in a new country. The most common form in which it makes its attack is with cold chills, succeeded by acute lancinating pains in some part of the thorax, which are greatly aggravated by a full inspiration. The pain is sometimes more severe in one side than the other, and sometimes occupies the whole region of the chest. The pulse becomes full and frequent, the respiration difficult, great thirst, furred tongue, and frequently a severe pain in the head. In those cases which terminate fatally, these symptoms increase; respiration becomes much hurried, painful, and laborious, a rattling in the throat, profuse expectoration, sometimes streaked with blood, a ghastly appearance of the countenance, cold feet and extremities: the difficulty of respiration continuing, the patient, as if

suffocated, expires in the most distressing agony. In other cases the disease, after a few days, assumes the typhoid type, and is sometimes, though not always, connected with the last mentioned symptoms, and in this complicated state puts a speedy termination to the life of the patient. The blood, when drawn, exhibits the most unequivocal signs of extensive inflammation. The following are the appearances on dissection.

The heart, pericardium, lungs, pleura, and diaphragm are generally found in a state of inflammation: in some instances, the liver is inflamed, commonly that portion which lies in contact with the diaphragm. In some cases a complete hydrothorax is found to have taken place; the pericardium containing a pint or more of water, of a semi-transparent or pearl-coloured appearance, and the cavity of the thorax a quart or more of the same kind of fluid; the heart much enlarged and abraded of its fine delicate membrane; the lungs adhering to the pleura, and much diminished in size, when the hydrothorax is very considerable.

I have, in this statement, given a description of the disease in its most violent form; but as it makes its attack with different degrees of severity, it is obvious that the method of treatment will require to be graduated accordingly. I consider this disease as in nowise different from peripneumonia, excepting, that a more general inflammation commonly takes place than what that disease has heretofore assumed. This, however, is referable to the pre-disposing causes above mentioned, as well as to the immediate exciting cause, which is generally that of a violent cold.

I am well aware, that much clamor has been raised against bleeding, the propriety of which, in some cases, and in some stages of the disease, would be very questionable; but from my own observation; in more than one hundred cases, and from the authority of Dr. Craige, (whose experience in this

complaint has been very extensive, and in whose skill and veracity I have much confidence,) I am prepared to assure the public, that in recent and violent attacks, bleeding is indispensable: blistering and profuse sweating also have been of eminent service. If the disease assumes the typhus symptoms, nothing has proved so successful as mercury, exhibited in such a manner as to produce ptyalism. If much acute pain remains during this stage of the disease, stimulants are not found so successful as in common cases of typhus; the stimulating plan, therefore, if entered upon, should be conducted with great caution, for if much inflammation remains it will bring on a recurrence of all the symptoms in an aggravated form.

DANIEL HUDSON.

Geneva, Jan. 12, 1813.

Observations on the Prevailing Pneumonia of New-York, in a Letter to Benjamin Waterhouse, M. D. &c. from James Mann, M. D. Hospital Surgeon of the United States Army; published in Jan. 1813.

Dear Sir,

AT the time of making the statement, which first appeared in the Vermont Centinel, respecting the sickness among the soldiers of the army, at Burlington, and which was made public with the sole view of counteracting false and exaggerated reports; it was my intention, when more at leisure, to give in detail, a particular history of the disease, not only as it appeared at Burlington, but at other cantonments of the army.

The prevailing epidemic is denominated by nosologists, PNEUMONIA. Its attacks are made under the various forms

of *sthenic* and *asthenic* diathesis, while those varieties of the disease mostly depend upon the habits established prior to the attacks. In many of the first cases, among the soldiers at Burlington, the disease proved fatal in a few days, in some instances, within twenty-four hours. The following are the most prominent features of the disease, under its most deadly form: heat of the body below the standard of health, extremities cold, pulse contracted and hard, not so hard as is usually found in pleurisies, which indicates the necessity of bleeding; respiration very laborious, not apparently so much from sharp pains through the sides and breast, as from a sense of suffocation. When asked, the patient says, that he does not feel much pain, but a weight upon the chest, an oppression arising from inability to inhale the air; a sensation, one would imagine, similar to that which might be produced by breathing atmospheric air deprived of its oxygen. This suffocation, accompanied with small pulse and general coldness, may be the consequence of some condition of the lungs, which renders that organ incapable of absorbing through its membranes, in due quantity, the vital principle of the atmospheric air, or its oxygen. There is often a copious expectoration of glairy viscid phlegm, sometimes uniformly coloured, or streaked with blood, while no relief is procured by its discharge from the bronchial tubes. The above form of disease is the *PERIPNEUMONIA NOTHA* of the ancients, and it is not unworthy of notice, that it generally falls upon those who are in habits of intemperate potations of spirituous liquors. Upon laying the chest open to view after death, there is the appearance of inflammation upon the lungs, and congestions within the vessels of that organ, with adhesions to the circumadjacent parts, without suppuration; its surface covered with a yellowish, gelatinous, semi-putrid extravasation; its spongy texture is lost, and assumes, in some measure, the firm compact state of the liver. The physician, in the above described

cases, hesitates, and cautiously employs his lancet. These cases, however, are few, compared with the multitude seized, which generally proved fatal under every method of treatment: while a fortunate administration of stimulants, in a solitary case of the disease within my knowledge, induced by an indiscriminate use of them, a most deadly practice. Such a practice was introduced, for a short period, by a physician who was called to attend the sick, at a time when the physicians of the army were overburthened with numbers. Could you have believed, that at this enlightened period, brandy and wine in profusion, with soups, were the remedies principally depended upon by him in every form of these pneumonic affections? However, prior to the employment of stimulants, an emetic and cathartic were administered; blisters were employed; the lancet was forbid by him under every form of this formidable epidemic. It has been already observed, that cases occurred where the physician hesitates and doubts the propriety of bleeding. The cases under this type are not one in twenty. It is worthy of notice, that in two, which came under my observation, where blood-letting was cautiously employed, the accidental opening of the orifice, during a restless night, produced so much relief, even a solution of the fever, as led to a persuasion, that in some instances, where the disease had proved fatal, bleeding had been employed with too much timidity. In one case, the patient apparently sinking under the above form of the disease, seemed to be rescued from the grave by six grains of opium, administered in divided doses of one grain every two hours, and a tea-spoonful of æther every half hour. The same treatment in other similar cases, was not attended with the like success.

In all cases of the above form of the disease, blisters are employed upon the sides, breast, and back; in some, these seemed to be of use. Where the body is torpid and cold,

sinapisms, warm and heated applications to various parts of the body, especially to the lower extremities, are necessary. It is proper to observe, that neither the stimulant, diaphoretic, nor depleting method of treatment is but seldom accompanied with success, in the most violent form of the disease. Its progress is rapid, and assumes in a few hours, the strongly marked symptoms of approaching dissolution; and it may be added, that even where suffocation with a rattling is commenced, and the heart ceases to perform its office, that the muscular strength of the patient is not remarkably impaired. Several have been seen to walk the room a few hours before death.

Much the largest number seized with this extensive epidemic, are under a *sthenic* form, with strongly marked symptoms of inflammation, and require the depleting and antiphlogistic method of treatment to its full extent. Stimulants here evidently hasten the patient into the first described fatal state of the disease. At the first attack, with strong arterial action, pains through the sides and breast, much heat, difficult respiration, little or no expectoration, and this tinged frequently with blood, bleeding is employed, from one to two pints. It is often necessary to repeat the operation. In a few instances two quarts have been drawn from the arm of the patient in the course of the fever with good effect. A cathartic of jalap and calomel, or calomel per se, is then administered. This, it is found necessary to repeat in some cases; but as the disease is frequently accompanied with diarrhœa, drastic purges are employed with caution. The diarrhœa, at times, is so profuse, that cathartics are not indicated while it is necessary to check these alvine discharges by opiates. The diarrhœas, which accompany this fever are not critical, they are not checked as the fever abates, except by opium: remaining obstinate for a long time even after the return of the appetite. After bleeding and cathartics,

under this form of pneumonia, calomel in small doses, combined with opium, is administered with benefit ; and where a gentle spitting is produced by its employment, pain in the breast is mitigated, or abates, laborious respiration subsides, copious and laudable expectoration, and moist skin supervene. To promote these last, vin. antim. and elix. paregor. prove an excellent medicine. When the antimony occasions too frequent evacuations by the bowels, small and repeated doses of pulv. dover. are substituted. When, after the inflammato-ry state of the disease is in a measure removed, more especially, where nausea and anorexia exist, emetics of ipecac. are advantageously administered. Blisters, in the course of the disease, are indispensable to remove stitches in the breast and sides, after blood-letting is carried to its proper extent ; believing with others, that there is a blistering, as well as a bleeding, and emetic period in fevers, the bounds of which being ascertained, should never be intruded upon by each other. As this disease has not been confined to the soldiers of the army, but has made its attacks and ravages in various places, about the same time, over a very extensive tract of country, it may be fairly inferred, that its spread far and wide is not the consequence of its contagious nature, any more than it is the effect of severe duty, negligence of officers, want of the necessaries of life, as it has appeared among the soldiers, as has been repeatedly represented in the public papers. It may be viewed as an epidemic produced by some latent cause : an unknown state of atmosphere, and, like all extensive epidemics, is more severe and fatal to such as are unavoidably, and in many instances, imprudently exposed to various additional exciting causes. Those who have attended to the progress of epidemics, may have observed, that among thousands who have been subjected to their influence, that a few have been treated with severity by the disease, and some have fallen victims to its rage ; while the deaths

which have occurred, might be imputed much less to the nature of the epidemic, than to the various exciting causes which co-operated to produce its mortality. The first, perhaps, in all cases, cannot be avoided; while the exciting causes, giving to the disease a severe or fatal form, is within the ability of man to obviate. Among the various exciting causes productive of a severe disease, under the present epidemic, only one will be noticed, viz: an intemperate use of ardent spirits. It is a fact, well known among the physicians of the army, that the disease has been fatal mostly among the men who are in habits of great intemperance. It has been also ascertained from various sources, that this disease has been most severe and fatal among that class of citizens who indulge in spiritous potations. It is a vulgar and mistaken opinion, that the use of spirits secures the body from the attacks of disease, and fortifies it against cold, or its effects; so far from effecting either of these, ardent spirits aggravate the injurious consequences of cold, and frequently predispose the body for the reception of a disease, under its most severe and perhaps mortal form.

Is it not a singular fact, that no notice is taken of the prevailing epidemic, and its mortality, among the citizens, by the several printers, when with much avidity they swell their columns with exaggerated reports of the disease, and its disastrous effects among the soldiers? Since it is well ascertained, that less in proportion to numbers who have been attacked with it, have become victims in the army, than among the citizens; although the last are better accommodated in houses, less crowded than hospitals, and surrounded by friends for nurses, generally more assiduous and attentive to their wants when sick, than soldiers, who are bound to each other by ties less strong than those of consanguinity. Is it a new and singular circumstance, that soldiers are more subject to diseases than citizens, independent of latent atmospheric

agents, as causes? When it is known, that more than four thousand soldiers have been seized with this epidemic, will it appear strange and mysterious that many deaths have occurred, and the officers not be implicated among the causes of the disease and its fatal event; when citizens are daily falling under its effects in towns and villages far and wide, in every district of the country. After being acquainted with the above facts, will it appear candid or ingenuous to state, that the physicians of the army are *ignorant*, more *ignorant* than the physicians of the country. Are not the means of information open equally to all? Were not the physicians of the army educated at the same school with the citizen practitioner? Did not government, out of a flood of applications, select and appoint those who had the fairest pretensions?

The communication is concluded by observing, that there is no essential disagreement among the physicians of the army, respecting the nature of the prevailing epidemic, and method of treatment. That it is not a new disease, as has been represented by some, the physicians of the army are all agreed. Perhaps it would appear invidious to say, that the epidemic is represented a non-descript by some physicians, as an apology for the want of success in the management of it. In consequence of the swelled accounts of the deaths in the cantonment at Greenbush, where there were from one thousand five hundred to three thousand, during the summer and autumnal months, and through which more than seven thousand men have passed since the month of May, and at which place have been left all their sick, and many of their convalescents, while passing, it may be necessary to state, that the whole number of deaths at this post, from that period to the present, does not exceed eighty-five.

With much respect, I am, &c. JAMES MANN,

Hospital Surgeon, U. S. Army.

DR. BENJAMIN WATERHOUSE.

Remarks on the Prevailing Epidemic, by John Stearns, M. D. of Albany. Read before the State Medical Society in February, 1813.

ALTHOUGH a few sporadic cases of the epidemic, which now prevails in this city, and the country adjacent, made their appearance in the fall; it was not till the middle of December last, that it began to be much noticed. From this time it gradually increased to the present period.

The symptoms which characterise this disease, are :

1st. Cold chills, which, in some instances, continue twenty-four hours, and are sometimes succeeded by a temperature, unequally distributed over the surface; while the face and trunk of the body are of a heat higher than natural, and considerably flushed, the extremities are cold. In some instances the chills are but slight; the violence and danger of the disease are generally proportioned to the length of the chill.

2d. Great and general prostration of strength, frequently accompanied with fainting.

3d. Extreme pain in the head, thorax, and sometimes in the extremities, accompanied with dyspnœa and hurried respiration; when the pain assails the head with severity, it generally terminates in delirium. The pain is sometimes severe in the back part of the head and neck, but generally affects the forehead, producing an extreme soreness in one, sometimes in both eyes. When the pains are not violent, the patient complains of a vertigo, and a dull, heavy sensation in the head, with an oppression at the stomach, nausea, and sometimes vomiting.

4th. The tongue is generally, at first, dry and covered with a white fur, which, as the disease advances, is in some instances converted to a dark brown.

5th. In violent cases, the face appears tumid and livid ; the eyes are remarkably protruded, exhibiting a yellow aspect.

6th. The urine generally flows in unusual large quantities, and is sometimes very high coloured.

7th. The pulse in the incipient stage is small, weak, tremulous, and in some instances suspended ; as the cold stage subsides, the pulse rises, but seldom to a degree of natural strength or fulness ; it appears to labour under a violent oppression, is often irregular, and generally slower than natural.

8th. The stomach is generally loaded with a vast quantity of gelatinous slime, which in tenacity resembles the white of an egg.

9th. When a diarrhoea does not usher in the complaint the bowels are torpid and extremely costive ; ordinary cathartics seldom produce their customary effects.

10th. A cough, with an expectoration of yellow mucus tinged with blood, in some instances, commences with the disease ; as it advances, clear blood is often discharged from the lungs and nose.

11th. A viscid sweat is generally thrown out upon the surface spontaneously, which is never critical, and if copious, is always injurious.

This viscous fluid is not confined to the surface. The saliva, gastric juice, and, indeed, every secreted fluid participates of the same disposition, and evinces a morbid affection of the whole secreting system.

The preceding phenomena indicate the existence of a disease entirely unknown in this section of our country. It appears to participate of two distinct and opposite natures ; *pneumonia* and *typhus*. A peculiar constitution of the atmosphere appears to predispose the system to a typhus fever, under circumstances peculiarly favourable to the pro-

duction of pneumonia: hence that state of disease is induced which may be denominated *Typhoid Peripneumony*, or *Pneumonia Typhodes*; a disease which, in some respects, strongly indicates the free use of the lancet, and in others, the liberal administration of stimulants. Hence originates a contrariety of treatment, which experience has proved to be very injurious to the patient: while some bleed copiously, others resort to the most powerful stimulants. When the prominent and opposite symptoms of this disease are nearly balanced, prudence would dictate the use of neither of these classes of remedies; while depletion increases the symptoms of typhus, powerful stimulants produce delirium, and aggravate all the fatal symptoms of pneumonia. It is only when one of these classes of symptoms clearly and distinctly predominates, that either of these remedies are ever proper. Indiscriminately to condemn both in all stages of the disease, therefore, evinces an imperfect knowledge of the complaint, and is the height of absurdity and presumption.

This is the same disease that prevailed in some parts of this and the eastern states, during the last winter, and is exclusively confined to this season of the year. It prevailed in England in the year 1685, and was faithfully described by Dr. Sydenham, under the name of the winter fever, which in a subsequent treatise, he denominated the *new fever*. In attempting to account for the origin of the fever, he traces its causes to the plague, which had preceded it a few years, and of which he considers this as completely "depuratory." Since his time we do not find it described as prevailing in any country till the year 1811.

"Doctor Macbride considers it as a mixed fever, and terms it *febris hyemalis*. Sauvages, a species of *Synochus*, and names it *synochus hyemalis*, though he thinks it merits more the denomination of *catarrhalis*. Both these authors have taken their account from Sydenham. Dr. Cullen classes

it as a variety of the synocha, or inflammatory fever. Huxham, in his observations *de aere et morbis epidemicis*, describes a fever, which he says nearly resembles this; and Dr. Swan thinks the mild catarrhal fever of Hoffman, which that author so accurately describes, and treats with so much judgment, bears to this a great similitude."—WALLIS.

After premising this brief sketch of the symptoms and history of this disease, I shall proceed to examine the remedies which have been prescribed.

1st. *Bleeding.* This, as I before observed, is extremely hazardous, unless symptoms of pneumonia or synocha decidedly predominate, and even in this case it should be used with extreme caution, and in small quantities, otherwise the typhus tendency of the disease prevails, and the patient sinks and dies. I have seen but one case in which it was indicated, and in which I took but four ounces.

Letters from eminent practitioners in some of the counties where it prevailed the last year, inform me, it was occasionally practised there with success. This was the practice of Sydenham, and is used by many the present season.

2d. *The warm bath.* In this disease the blood recedes from the surface and extremities, accumulates in the large vessels, and completely oppresses the action of the heart and arteries. A universal coldness and frequent chills consequently pervade the whole surface of the body till the torpor of the extreme vessels is overcome.

The first indication of cure is, therefore, to restore action to the surface and extremities, and thence to preserve that equilibrium of the circulation which has been entirely destroyed.

This indication is successfully answered by the total immersion of the body in warm water, in the incipient stage of the cold chill. If the warm bath is applied at this early period, the disorder is effectually subdued in forty-eight

hours ; but if delayed till the cold stage is considerably advanced, its operation is less efficacious.

Immersing the extremities in warm water, and general fomentations to the surface, may be substituted when the warm bath cannot be procured. This should be continued till the chills have entirely subsided ; it should then be discontinued, otherwise the copious sweats thereby induced will debilitate and sink the patient, or accumulate the morbid heat of the system, and thence induce delirium. Warm diaphoretic teas should accompany the use of the warm bath.

3d. *Emetics*. When the head is affected with pain or a vertigo, or a dull heavy sensation, accompanied with an oppression at the stomach, or a nausea and vomiting, an emetic is indispensably necessary. It invariably ejects a quantity of cold, viscous slime, which resembles, in tenacity and colour, the white of an egg. If this fluid is not evacuated, a torpor of the stomach and bowels ensues, which enhances the danger of the disease in its progress, and essentially impedes the cure.

When the emetic has been given early in the disease, and its operation proves effectual, the preceding symptoms readily yield ; but if they continue obstinate, the emetic may be repeated, and succeeded by

4th. *Cathartics*. Calomel, or calomel and jalap, if given early in the disease, and repeated as the symptoms may require, soon obviates the obstinate costiveness of the bowels, and restores their natural tone, by evacuating their extremely offensive and debilitating contents.

5th. *Diaphoretics*. Although profuse and long continued sweats are evidently injurious, as they induce debility without, in the least, promoting a crisis, yet a naturally soft and moist state of the skin is always accompanied with a mitigation of the pain, and ought ever to be encouraged. To promote this object, I make a liberal use of snake root, sage,

METEOROLOGICAL TABLE,

Containing the results of a series of Observations made at Norwich, State of Vermont, from the 1st of July, 1811, to the 1st of May, 1812.

MONTHS.	THERMOMETER.					BAROMETER.				Date of the greatest degree of cold	Date of the greatest degree of heat.	Depth of snow in inches.	No. of clear days.	No. of days on which rain fell.	No. of days on which snow fell.	No. of cloudy days.	No. of days pt. clear & pt. cloudy.
	No. of observations.	Greatest degree of cold	Greatest degree of heat.	Mean temperature.	Greatest variations.	Difference of temperature between each succeeding no.	Greatest altitude.	Least altitude.	Mean altitude.	Greatest variations.							
July.	40	50°	2°	70	2-3	12°	29.17	28.71	28.91	.46	27th.	18th.		14	16	0	1
Aug.	96	45	32	70	17		29.30	28.75	28.67	.54	9th.	20th.		18	9	1	3
Sept.	84	31	65	51	5		29.24	28.55	28.94	.69	27th.	4th.		17	7	2	4
Oct.	82	17	75	47	58	18	29.42	28.50	28.99	.92	27th.	12th.	3 5-10	13	12	3	1
Nov.	82	19	51	32	1-2	39	29.44	28.40	28.95	1.04	26th.	9th.	5	7	13	3	3
Dec.	87	-16	18	19	1-2	64	29.20	28.09	28.74	1.11			23 9-10	3	2	8	9
Jan.	81	-24		4	50	5 1-2	29.23	28.09	28.60	1.14	18th.	26th.	23 4-10	3	0	16	6
Feb.	78	-31	15	15	65	1	29.14	28.15	28.77	.99	25th.	4th.	38	7	13	2	6
Mar.	86	-4	51	24	2-3	47	29.25	28.45	28.90	.80	2d.	27th.	14 1-10	10	3	7	4
April.	79	22	35	10	42	15 2-3	29.26	28.38	28.89	.88	12th.	25th.	5	5	7	3	2
	794	-51	92°	39	9-10	12°	29.44	28.09	28.83	1.35	Fb. 25.	Jul. 18.	112 9-10	97	70	52	32

Note.—The town of Norwich is situated in the east part of the state of Vermont, adjoining Connecticut river, and opposite Dartmouth College, in the state of New-Hampshire, in north latitude 43° 33'. The altitude of that part of the town where the observations were made, above tide-water, I found by a barometrical calculation to be 917 feet, and 629 feet above Connecticut river. In the second column of the above table, whenever the sign - is prefixed, it denotes that the thermometer was below cipher; thus, -16, denotes that thermometer was 16 degrees below cipher.

METEOROLOGICAL TABLE,

Containing the results of a series of Observations made at West-Point, State of New-York, from the 1st of April to the 31st of May, 1811, and also from the 11th of May to the 30th of November, 1812.

MONTHS.	THERMOMETER.						BAROMETER.				Date of the greatest degree of cold.	Date of the greatest degree of heat.	Depth of snow in inches.	No. of clear days.	No. of days on which rain fell.	No. of cloudy days.	No. of days pt. clear & pt. cloudy.	
	No. of observations.	Greatest degree of cold.	Greatest degree of heat.	Mean temperature.	Greatest variations.	Difference of temperature between each succeeding mo.	Greatest altitude.	Least altitude.	Mean altitude.	Greatest variations.								
1811																		
April.	90	27°	32°	52	55°		30.10	29.10	29.44	1.00	2d.	16th.	0	14	8	6		
May.	75	40	77	60	37	8	30.06	29.10	29.60	.96	3d.	7th.	0	17	11	2	6	
	165	27°	92°	56	55°		30.10	29.10	29.54	1.00	Apr. 2d	Apr. 18.	0	31	12	8		
1812																		
May.	59	46°	79°	61	33°		29.91	29.20	29.60	.66	17th.	31st.	0	3	9	7		
June.	77	57	86	71	1-3	29	29.76	29.20	29.41	.53	5th.	9th.	0	3	11	9		
July.	92	56	91	76	35	4 2-3	29.80	29.40	29.59	.40	1st.	7th.	0	8	11	12		
Aug.	78	63	87	73	1-3	24	2 2-3	29.85	29.40	29.60	.45	13th.	25th.	0	5	11	12	
Sept.	89	48	81	66	1-3	33	7 8-15	29.98	29.27	29.72	.71	21st.	2d.	0	6	11	10	
Oct.	57	40	78	55	2-3	38	10 8-15	30.00	29.20	29.66	.80	24th.	2d.	0	5	9	16	
Nov.	89	22	67	44	45	11 2-3	30.16	29.00	29.57	1.08	25th.	5th.	0	5	7	13		
	541	22°	91°	64	64°		30.16	29.00	29.60	1.08	Nov. 25	July 7	0	35	71	97		

Note.—In the above, as also in all the preceding tables, the barometer used was graduated in French inches.

Literary and Philosophical Society of Liverpool.

This society, whose objects are similar to those of the Literary and Philosophical Society at Manchester, was instituted in February, 1812. The number of members already exceeds sixty; and their meetings are held monthly, from October to May, inclusive. The officers are, the Rev. *Theophilus Houlbrooke*, President; Rev. *Joseph Smith*, Dr. *Bostock*, and *John Theodore Hostor*, Esq. annual Vice-Presidents; Dr. *Thomas Steward Traill*, Secretary.

Address of the Students of the College of Physicians and Surgeons.

At the particular request of the chairman and of the students a place is given to the following address. The wishes here so ardently and so ingenuously expressed, we have the fullest confidence will be realized, and that at no distant day, the students of medicine will unite in resorting for instruction to this College, as the *medical establishment of the state*.—ED.

At a meeting of the Students who attended the several courses of Lectures in the College of Physicians and Surgeons of New-York, held at the College Buildings, Pearl-street, on Monday the 2d of March, 1813; WM. F. QUITMAN, Chairman, JAMES SEAMAN, Secretary, it was unanimously resolved, that the following Address of Thanks to the Professors be made public:

THE students of the College of Physicians and Surgeons, in the city of New-York, unwilling to suppress the emotions of gratitude they feel for the instruction they have received during the session of the college, just closed, avail themselves of this opportunity of manifesting, thus publicly, their acknowledgments. Sensible of the importance and dignity of the profession, of which they expect shortly to become members, it is with peculiar satisfaction they have witnessed the increased zeal and spirit of our legislative, and other public bodies, for the establishment and support of a state medical school. Every member of the community is vitally interested in whatever adds to the facilities of medical instruction; and the exertions of the legislature in organizing the College of Physicians and Surgeons in this city, have already produced effects the most important and beneficial. Public instruction can be effectually imparted only by means of public munificence; and it will not be disputed, that the science of medicine has the first claim to the patronage of a great and powerful state. It would be idle here to recount

but no conscientious surgeon could refuse it a trial, because the choice lay between that and amputation. Its merits were soon amply confirmed, and it would now be reckoned madness to amputate for aneurism. In the above proposal also, the choice may fairly enough be said to lie between amputation and tying a main artery. It would not have been made public with only one case in confirmation, if the opportunities of private practice had justified the expectation of being soon able to test it by more extensive experience.

I am Sir, with great consideration,

Yours, &c.

HENRY U. ONDERDONK.

DR. HOSACK.

IV.

*ACCOUNT of the YELLOW FEVER which prevailed in VIRGINIA in the years 1737, 1741, and 1742, in a Letter to the late CADWALLADER COLDEN, Esq. of New-York, from the late JOHN MITCHELL, M. D. F. R. S. of Virginia.**

SIR,

In giving you an account of the pestilential distemper which has lately raged in Virginia, I shall not touch on any

* A series of highly interesting papers on the Yellow Fever which many years ago prevailed in Virginia, embracing the account written in 1744 by the late Dr. Mitchell of that state, with a reply of Dr. Colden to Dr. Mitchell, and a subsequent letter of Dr. Mitchell on the same subject, was placed in the hands of Dr. Hosack by the late Prof. Rush of Philadelphia, a short time previous to his death. As these papers were intended by Dr. Rush for publication in the Register, we have commenced in this number with the first in order, the letter of Dr. Mitchell to Dr. Colden. Some of our readers may recollect that extracts from this account formerly appeared in the Philadelphia Medical Museum; they however

thing relating to it, which you have had a full account of already in the same or like disease; that I might the better consult leisure for writing, and spare you the tedious trouble of reading. For which reason it would be needless here, to enter into a particular enumeration and description of all the symptoms which accompany this dire disease; they being no more, and no fewer, than what are commonly ascribed to, and may be observed in most malignant fevers; besides, they are already enumerated by Dr. Warren. The symptoms and three remarkable stages of our disease, are much the same as those observed by the said author in the malignant fever of Barbadoes; but I shall recount those symptoms, which appeared to me to be pathognomonic and inseparable from the disease, at least when rightly formed, as they seem not yet to be so well known; by which this fever will appear to be of the malignant kind, as it generally resembles those that are contagious, by its first appearing with a pain in the head and back and about the stomach, succeeded by grievous anxieties and oppression about the præcordia. And in general this distemper may be defined to be, a pestilential fever proceeding from a *contagious miasma sui generis*, which inflames the stomach and adjacent viscera, obstructs the biliary ducts, and dissolves the adipose humours; to which generally succeeds an effusion of a bilious or other yellow

will now be furnished with an entire copy. Few papers we believe will be read with more interest, particularly when it is known how extremely important Dr. Rush considered it in affording him new views of the nature of the same epidemic at the time it prevailed in Philadelphia in 1793.

On the character of Dr. Mitchell it is unnecessary particularly to remark. He was a distinguished Fellow of the Royal Society of London, and eminent as a physician and philosopher. With Chalmers and Lining, of South Carolina, and Alexander and Colden, of New-York, he has done much for the advancement of medical and physical science on this side of the Atlantic.

EDITORS.

humour upon the external or internal surface of the body, unless prevented by some means or other.

Those pathognomonic symptoms appeared to be the following six, of which the three last are more peculiar to it. 1. A very great and sudden debility, without any manifest cause. 2. A feverish anxiety, generally very grievous. 3. A short, quick and difficult orthopnœic respiration, after the fever is formed. 4. A contracted deep pulse; the artery feels tense, but the pulse is compressible, to which succeeds a depressed, or soft and low pulse, after the state of the disease, or after the yellow effusion appears. 5. A pain of the scrobiculus cordis, either much complained of, or to be felt on pressing that part; and more or less severe according to the severity of the disease. 6. A yellowness in the eyes or all over the body at the state of the disease; unless prevented by colliquative or critical discharges; to which may be added a violent and unusual kind of pain of the head, unless it is drowned, as it were, in the more grievous complaint about the præcordia.

The proximate causes and state of the body in this disease may be pretty evident, to those versed in the animal economy, from the following anatomical dissections.

February 14, 1741-2. At the request of Richard Chichester, Esq. in Virginia, and in the presence of him and several others, I opened the body of one of his slaves who died of this disease. This was the body of an elderly woman, past forty, who died the day before, on the fourth of the disease, with the following complaints: grievous and violent anxieties, occasioned, as she said, by the sickness of her stomach, severe pain of her head and back, returning by intervals, contracted hypochondres, and the scrobiculus cordis painful to the touch, short, quick and interrupted respiration, with deep sighs and heavy groans; a slight raving rather

than delirium, a black tongue, unquenchable thirst, tremors, very quick and depressed pulse, the eyes very yellow, a sudden and severe pain about the navel a few minutes before death.

After cutting the teguments of the abdomen, the fat of the body appeared very yellow, so as to be noticed by the bystanders, and was indeed as yellow as the eyes commonly are in a jaundice. Upon penetrating into the cavity of the abdomen and laying the teguments aside, I was surprised to see no such thing as an omentum; at first I imagined I had torn it off, or removed it to one side with the teguments; but in vain was it sought for in the whole body. There appeared a few things like the blood vessels of the cawl adhering to the place where it is generally connected to the stomach and colon; the traces of which connection might be discerned; but there were no more remains of its substance, than a little yellowish thin oily liquor floating up and down among the intestines and about the mesentery.

The liver appeared turgid and plump without any blemish on its outer convex surface; but on the concave surface, two thirds of it was of a deep black colour, round the gall-bladder seeming to be mortified or corrupted.

The gall-bladder appeared outwardly of a deep yellow, but within was full of a black ropy coagulated atra-bilis, which sort of substance likewise obstructed the porus biliaris and ductus choledochus. This atra-bilis was hardly fluid; but on opening the gall-bladder it retained its form and shape without being evacuated, being of the consistence of a thin extract, and withal glutinous and ropy like soap when boiling: this black matter seemed so much unlike bile, that I doubted if there was any bile in the gall: it more resembled bruised or mortified blood, evacuated from the mortified parts of the liver surrounding, although it would

stain a knife or probe thrust into it of a yellow colour, which, with its ropy consistence, seemed more peculiar to a bilious humour.

The duodenum was of a deep yellow colour as usual upon its outside; but where contiguous to the cystis fellea, had a mixture of a deep green or eruginous colour intermixed with its yellow; within, it contained a viscid bile, or rather a yellow mucus, closely adhering to its tunics, mixt with a little of the black bile, like that contained in the cystis. Its villous coat appeared to be lined with a thicker fur or slime than ordinary, which being scraped or peeled off, the other vascular and muscular coats of the gut appeared red and inflamed.

The stomach seemed manifestly inflamed; it had on its outer surface, towards its upper orifice, two large broad spots of a dark red colour, somewhat resembling the flushings in the cheeks, or a rose on the leg; it had nothing within but a little drink which had been just swallowed, and some of the black choler, resembling that in the gall-bladder, floating upon it, which was of a blacker colour here than in the gall-bladder itself; it looked ruddy within as if it had been inflamed there likewise; its villous coat appeared, like that of the duodenum, more fuzzy and slimy, as if it were swelled or distended, which was particularly remarked by all others who opened any bodies that died of this disease.

The lungs, instead of being collapsed, were rather inflated as in inspiration; they were all over full of black or livid spots, some as broad as the palm of the hand, others much smaller; on which spots, generally, were to be seen small vesicula, or blisters, like those of an erysipelas or gangrene, containing a yellowish humour.

I did not so curiously examine the other parts, as I saw no defect in any: and these seemed sufficient to show the

cause of her death, and account for the several symptoms of her disease: only the blood vessels in general seemed very empty of blood, even the vena cava and its branches; but the vena portæ was full and distended as usual; the blood seemed to be collected in the viscera; for upon cutting the lungs, or sound liver, or spleen, they bled freely. The brain was not opened, for want of conveniences at hand; but it did not seem to be affected in the disease, and was not affected in three more who were opened.

This woman was taken with a pain in her head and back, extending from the loins as far as the region of the liver, with great sickness at her stomach, succeeded by chilliness, burning fever, anxieties, &c. and was treated with a snake-root sweat in the time of her disease; but took a vomit at its first seizing her, which brought up much dark, bitter choler, without any relief. She was in perfect health before this distemper seized her all of a sudden, as she was at work.

The day before, I opened likewise a girl about twelve or thirteen years old, who had been dead about two or three days, and was preserved on purpose for me to open. She died on the sixth or seventh day of the same disease, with which the other and several in that family had died. In her, the distemper was left almost entirely to nature, except her losing about four or five ounces of blood, and the plentiful use of diluting teas which she had recourse to. A little before her death, she complained in the same manner with the other, of a most violent pain in her belly about the navel, succeeded by grievous and intolerable anxieties: they had no suspicion of a yellow fever at that time, and so did not notice her eyes.

There was little difference between the affection of the parts in her, and the one whose case has been related. The

fat of the body did not appear quite so yellow ; but the liver had a much greater and deeper mortification or blackness on it, the whole under concave surface of it was very black as far as to the very edges, which penetrated very deep into its substance about the gall-bladder, which was full of the same atra-bilious, glutinous, ropy humour as in the other. The omentum was entirely consumed or destroyed in this subject, in the same manner as in the other, whose case has been related ; and a little yellow oily matter floated up and down in her abdomen. The stomach and duodenum were affected much as in the preceding case, only there was little sign of any external inflammation on the stomach. The lungs were affected in the same manner, but not with so large or deep black spots.

In the spring of the year 1737, there were two more opened, who died of the same distemper, in whom the parts were affected in the same manner as has been related in the first case, particularly as to the destruction of the omentum, blackness of the concave surface of the liver, contents of the gall-bladder, inflammation of the stomach and spots on the lungs ; as he who made the dissection, and others who were present at it, particularly informed me. September, 1742, another was opened who had died of the same distemper, as the two persons above related ; although got from a contagion which was supposed to have come from a different place : in him the omentum was likewise entirely consumed and destroyed ; the stomach a little inflamed, but no blackness was discerned on the outer surface of the liver, and its inner substance was not looked into, although the cystis fellea and biliary ducts were full of the same black, glutinous, coagulated matter, as in those cases I have related.

The following account of the state of the blood which I have carefully observed in this disease, may likewise help

to illustrate its nature, and show the state of the body in it. The blood extracted by venesection is of a deep red or florid colour, appearing to be thin and fluxile, with no sisy inflammation, crust, or skin whatever upon it when cold: the crassamentum is broad, shallow and floating, being easily divided by the fingers; the serum makes about two thirds of the whole blood, or more, when let at, or nigh the state of the disease; and about one half at the beginning: after the state or height, it seems by the pulse to be more; a large proportion for an acute continual fever. Even those who are bled after a received contagion before the fever is formed, have a thin dissolved florid blood, even in winter. This was the constant state of the blood in about thirty or forty whom I have known to have been bled, at all seasons of the year. But the arterial blood which I have had an opportunity of seeing was very different. Feb. 17, 1741-2, five or six ounces of blood were taken from the temporal artery of one labouring under this disease, on the fourth day, just as the yellowness began to appear in the eyes, attended with a stupor; this blood was not more florid than what the venous blood generally is in this distemper: when cold it had a purulent yellow skin or inflammatory crust on the top, exactly resembling the crust on the venous blood of pleuritics, but not very thick, although tough and not easily divided; the crassamentum was very cohesive, thick and blackish at bottom; the serum made not above a sixth or eighth part of the whole, which was of a deep yellow or saffron colour, and would tinge the finger or a linen rag dipped into it, of the same colour as if dipped in gall; deeper than is commonly to be seen on a rag dipped in the urine of persons in a jaundice. On this every one that saw this blood was convinced that the distemper was what is generally called the yellow fever in America.

Dr. Langrish says, we are not yet well informed of the state of the blood in malignant fevers; this perhaps may be some help to a more certain and general determination of that necessary point.

Qu. Whether this difference between the blood of the veins and arteries is not a confirmation, or rather an ocular demonstration of the ingenious Bellinian hypothesis, which supposes a viscid lentor to be joined with a more dissolved acrid blood in malignant fevers? It is true, there was no blood taken from the veins of this person, but there was from one labouring under the same disease, in the same house, on the same day of the disease, but a few days before, which was like what I have described the blood of the veins to be; and was always found to be by all that ever saw it in this distemper. If this is the case in other malignant fevers, what surer sign, or more powerful cause can there be of their malignity than that the arterial blood should be viscid, thick, and sily, whilst the blood in the veins is thin, dissolved, and fluxile; so contrary to all the laws of circulation. Whence colliquations and obstructions at one and the same time; irritations joined to viscidities! Spasms brought on inflammations. Hence a mortification of some, and total destruction of other internal organs in a few days time! I cannot pass over two other remarkable circumstances of this disease: I mean the total destruction of the omentum and yellowness of the body which seem so peculiar to it. As for the first, it appears from these dissections, and likewise from the whole course and symptoms of the disease, that there is an inflammation of the stomach, joined with spasmodic constrictions and convulsive motions of that and also other parts about the præcordia. These spasms hinder the flux of the bile throughout the ductus choledochus into the duodenum; (*vid.* Hoffman, de Inflam. ventris,) which by the heat of the

adjacent inflamed parts, is thickened to that degree which we have described to be in the cystis and ducts; hence an obstruction of the liver as well as of the biliary ducts. This obstruction of the liver causes a slower efflux of the blood and dissolved adepts from the omentum through the *venæ portarum*; whence the blood is accumulated, stagnates, ferments and corrupts in the omentum: at the same time the inflammation and spasms of the stomach cause an obstruction and slower circulation of the accelerated blood through the gastric arteries; hence the blood will be propelled in greater quantities and augmented force through the other branches of the *cœliac artery*, but especially through the *gastro-epiploic*, which arise or proceed immediately from the gastric. Hence the blood is more forcibly impelled into the omentum whilst it is denied a passage through it, or exit out of it, by the veins: from whence, not to mention other concurring causes, as spasm and heat of adjacent inflamed parts, distortions, from anxieties, &c. arises a large, sudden, and total inflammation, strangulation of the circulation in that whole organ, which necessarily brings on mortification, putrefaction, and dissolution; especially in so tender and delicate a part, used to the slowest circulation, and the mildest, smoothest humours of the body, and through which a thin, hot, sharp blood is now propelled with an augmented force and celerity. Surely the inflammation and suppuration or mortification by a boil is brought about and breaks through the skin, a much thicker membrane than the fine subtile membrane of the omentum, in as short a time, in the analogous *membrana adiposa*. But another no less powerful cause concurs to this destruction of the omentum, the inflammation of the stomach spreads over it, in another manner, and from another cause, which is no less destructive to it. It is well known that the inflammation accompanying malignant fevers is of the erysipelatous kind. All the circumstances of this disease,

and the very looks of the inflammation of the stomach seem to confirm the same. But the nature of an erysipelatous inflammation is to spread from one place to another; and from hence this inflammation, when it is once fixd on the stomach, easily spreads over the contiguous omentum: and any one may easily imagine, what havoc the sharp and ulcerating blood of an erysipelas, must make on a tender and delicate omentum; being moreover so contrary to its natural humours; but perhaps some may imagine this cause not to be different from the other before mentioned. I need only hint, what dire and fatal effects, such a spreading pernicious affection must produce among the other adjacent or contiguous organs to the stomach, the liver, spleen, pancreas, pylorus, intestines, mesentery, and especially the diaphragm, but above all the upper orifice of the stomach; from an inflammation of which those who escape, as Forestus expresses it, may be reckoned the sons of Jove; hence those syncopes, convulsions, hiccups, sudden, and unexpected deaths, and most other fatal symptoms of the disease. For if such an inflammation totally destroys a part in a few days, how dismal and fatal will its effects be, when it seizes the vital nerves and organs! But perhaps it may not be amiss to take notice of the symptoms which seem to be diagnostic signs of this destruction of the cawl, an accident which happens, or is taken notice of so seldom, that its signs seem to be unknown. These appeared to be more than ordinary anxieties, a fear and dread of any thing touching the region of the stomach, great and intolerable pain on pressing the scrobiculus cordis, no sign of respiration below the ribs, a palpitation of the abdominal muscles, contraction of hypocondrics and violent excruciating pain about the navel, forerunning death. In the next place I shall consider the cause of the yellowness which is so remarkable in this dis-

temper, as to have given it the name of the Yellow Fever. Although this is rather an accidental symptom than an essential mark of it, as the vulgar believe, yet it is far less to be deemed a critical discharge or appearance or salutary effort of nature to get rid of her oppression; it is rather the most threatening symptom which appears in the whole disease, as will be evident to those who consider its causes. These causes may be referred to the following affections of the body, of which sometimes one and sometimes all these seem to conspire to produce this dreadful appearance. By what has been related above we may see that the blood is dissolved in this distemper, and it is probable that the serous parts may be dissolved or attenuated by the disease as well as the red globules: these dissolved humours will be apt to enter the lymphatics, &c. vessels, designed to convey a more subtle aqueous, and consequently more pellucid fluid, than they; for we know that the lymph is much more clear and pale than even the serum of the blood, in time of health, but more especially in many inflammatory fevers. But this does not seem to be sufficient to account for that universal deep and intense yellowness, which is often to be discerned in the skin, but especially in the eyes of some people labouring under this disease; nor is it sufficient to account for the yellowness of the urine, which I have seen of as deep a yellow in this disease as in those that labour under jaundice. We see that the omentum is much dissolved, so as to be sometimes totally consumed, and it is very probable from the great and sudden prostration of the body without any manifest copious evacuations, that the other adipose humours are likewise dissolved in this disease, as contained in the analogous membrana adiposa. This dissolved adeps will not easily incorporate with a thin dissolved blood in such a precipitate circulation; but be left to stag-

nate in the extreme capillaries, wherever the circulation is slowest; besides, by the heat of the body in the fever, it will be turned more yellow, and by incorporating with the acrid salts of the blood, now disengaged from its other component parts, whose texture is broken or operated upon by the miasma, or effects of the disease, a bilious humour will be generated, not unlike true bile itself; as bile is nothing but a humour resulting from such a mixture, its oily parts being more particularly supplied by the omentum.

This seems to be the more particular cause of that yellowness which is so peculiar to this disease, and may particularly distinguish this symptom of it from the same appearances in other distempers. But when the liver is inflamed, as we see it is in a few days, or the spasms or inflammation of the stomach and duodenum or inspissation of the bile in the cystis, puts a stop to the efflux of the bile through the common duct, then no one will doubt, but that a true and genuine icterus is produced from the true bile, in the manner commonly explained. And indeed this symptom, when the yellowness is great and very deep, appears to proceed chiefly from this cause, as it first appears in the eyes, then in the urine, and goes off by a tinctured lateritious urine, or bilious stools; in all which it resembles a true icterus from hepatic bile. It is often, likewise, attended with a singultus, a sign of an inflamed liver; at other times this yellowness comes on with a rigour, as Hippocrates likewise observed, (*de vict. an. lib. 4. §. 7.*) like a true abscess or translation of a heterogeneous matter from one part to another. Nor is it very probable that that deep yellowness of the blood, taken notice of above, is occasioned without some admixture of the hepatic or cystic bile with it. To this cause seems to be owing that icterus which if it does not appear before the seventh day, continues during the apyrexia, but proves dan-

gerous in the relapse, which is seldom attended with any yellowness with us.

It is of the greatest importance in the cure, to know the course and stages of this disease, and the different changes it undergoes from first to last ; with the times when they may be expected. By an account of this we may satisfy an ingenious query of the learned Dr. Clifton in his *Hippocrates*, p. 260, to wit, ‘ Whether the observations concerning the course and periods of acute diseases, delivered by Hippocrates, hold true in places at a greater distance, such as the East and West Indies, America, &c.?’ This is reckoned a disease as peculiar to our new world as any other, and consequently as fit to adjust this matter by ; which, if once determined, may make those excellent observations as universal and extensive as they are useful. But I have not only observed this ; but likewise other epidemic diseases, which owe their rise to a certain uniform cause, which seem to be the diseases chiefly pointed at by Hippocrates in his *Prognostics*, to have the same course and periods in Virginia as delivered by the father of physic.

This fever was exasperated on equal or unequal days, till the fourth, which was what is called the state of the disease in Virginia, in the winter and spring season, when the disorder has chiefly raged here : on this day the signs of the yellow effusion began to appear, either in the eyes, or by vomiting and purging ; this day was the index of the seventh. All good changes or favourable symptoms now denoted recovery on the seventh, as any bad appearances on this day portended death on the sixth. If the exacerbations were on equal days, they generally died in the third paroxysm, or the sixth day ; but if on unequal days, they recovered on the seventh. Relapses happen either on the eleventh or fourteenth, which were adjudged on the fourteenth or seven-

teenth respectively ; and this without exception in any, except those in whom the natural course and tendency of the distemper was prevented by a preposterous method of cure, or sudden and extreme severity of the disease, and all the regular efforts of nature upset thereby.

This distemper is remarkably contagious, of which we had the better opportunity to be satisfied here in Virginia, where we live in separate and distant plantations, consisting of numbers of servants and slaves ; any of whom, if the distemper once seized, there was little security for the rest, but removal. The distemper spread rather slower than I have observed the measles or small-pox to do here ; but it spreads faster and rages more violently in the spring season, or from Christmas to Whitsuntide, than any other time of the year ; which I have likewise observed of these other distempers in Virginia. But the vicissitudes of our seasons in Virginia, where the changes in the seasons are reckoned greater than in any other place whatever, or our care in preserving against it, seem to have put a stop to the contagion. But it is likely that in the West Indies where they have no such vicissitudes of seasons, which are generally observed to put a stop to a pestilential contagion in northern climes, they may hardly ever get rid of this distemper, (no more than the Turks in Asia and eastern nations do of the plague,) without a purification of the infected places, or separation of the sick. As this was the case, several prophylactics were sought for, when it got into large families ; the common alexipharmic method with snake-root drams I knew to prove ineffectual.

The following seemed to be the only effectual prophylactic I ever knew tried, and which proved effectual in fifteen in one family, where none escaped without some preservative or another ; and wherever it was duly complied

with, the good effects of it were very evident. I observed, that before the fever formed itself, the sure sign of a received infection, ready to display its tragical effects, was a sudden and unusual pain of the head, generally above one or both eyes, which in some remitted with short intervals, and caused a giddiness or vertigo, rather than sharp pain, attended with an unusual feebleness and languor of the body, and often a sickness at the stomach; these complaints, I observed, were little regarded till the fever seized them very often all of a sudden, a few hours afterwards. Upon the first complaint of this pain of the head, they had six or eight ounces of blood taken from the arm. Some fell into large sweats or plentiful breathings, soon after bleeding; by which their disorders went off: but those that did not sweat, and their complaints continued, took a vomit of ipecacuanha soon after bleeding, and the night after the vomit fell into the like sweats, by the plentiful use of tepid diluents and warm covering. After these applications the distemper never formed itself, as it ever did when these complaints were neglected; although many had a brisk acute fever after, or in the time of their administration, for the space of twelve or twenty-four hours, of the same nature with this fever when once formed; and all were less or more feverish in the time of their sweats, which, however, went off with them, and never returned.

In all those that were bled, even in these circumstances, the blood was thin, watery, and seemingly dissolved, and that in winter; a very uncommon thing at that time of year in Virginia. Some few were seized so suddenly as not to give room for this method of prevention; which, however, in most, proceeded rather from inadvertency and neglect of a slight sudden disorder, for want of knowledge of what it meant, than from want of warning.

But although I can say that I never knew this prophylactic method fail where it was rightly tried; yet we cannot always perhaps expect such good effects from it: still, even then it might be well worth while to put it into practice in these circumstances in all large families, towns, camps, or ships, in which this distemper has chiefly raged in America; for it has chiefly got among sea-faring people, who sail these seas, and has been twice brought to Virginia by his majesty's ships of war, from whence great loss is sustained, both in private commerce and the transaction of public affairs; which may make any account of it there more interesting, for if it were to prove ineffectual for preserving against it, yet it seems to be the best preparative for the body to undergo the disease. *Nam prima et præcipua in medicatione indicatio est, ut venenum susceptum ocyus citius e corpore pellatur. Jam vero miasma contagiosum primo omnium salivali sese immiscet latici, cum hoc ad ventriculum descendit et inde ad sanguinem transfertur. Hinc optimum utique consilium, ut venenum brevissima, qua subiit via, iterum exturbetur, simulatque cruditates primæ regionis, quæ deleteriam ejus virtutem mirifice intendunt per stomachic os everrantur. Sed opus est ut cito id fiat, simulac quis se infectum et languorem cum cardialgia sentit, &c.* Hoffman. *Medicinæ Syst.* vol. iv. p. 299, 300.

In this manner we come to use emetics safely in this disease, which are supposed to be necessary by many, and sometimes much relied on; as they do, indeed, when given time enough, help to prevent its worst symptoms, although they are little less than fatal in them; so that it may be truly said of them, what Celsus said of bleeding in an apoplexy, 'They either kill or cure.'

The bounds of this epistle will not allow me to be particular about several remarkable things which occur in this

disease ; especially in the cure of it, and in the consideration of the different *lædientia et juvantia* ; but I shall take notice of four things indicated in the cure, which, if duly complied with, afford much relief at first, and security at last, and which seem to be the chief, from which art seems to afford any considerable and signal assistance to nature.

The first and chief scope of the cure is to conquer the power of the disease, before it has produced any of its ill effects on the body, so as to render it more mild and tractable, than it usually is, when left to take its course ; else the event will be precarious. The worst of these effects, and most to be dreaded and avoided, as we may learn from the above dissections and course of the disease, proceed from an inflammation of the viscera. The principal way to prevent which, is generally to be by large evacuations at first ; so that the chief indication of curing this disease is the same as in other inflammatory fevers, viz. to keep off any local inflammation, or more universal obstruction of the capillaries by evacuations. Plentiful bleeding is a means commonly found most effectual to obtain this end in the benign inflammatory fevers ; but we cannot apply this most effectual remedy in this disease, because it evacuates only or chiefly the red globules of blood, which as we see by its state taken notice of above, are in too small a proportion already ; and bleeding further breaks the texture of the blood, which above all things is to be avoided in this disease : for after plentiful bleeding the pulse sinks, or at least is so low and feeble about the state of the disease as to prove of dangerous consequence ; which some instances I have known seem to confirm. So that the only way to make this necessary evacuation at first, is by such outlets as discharge the serous dissolved parts of the blood, and perhaps the miasma

of the disease within them, but leave the globular part, that strength of the body, whole and entire. For a discharge of these, by bleeding, causes that debility which cures other inflammatory fevers, but is one of the pathognomonic or most threatening symptoms of this; whereas a discharge of the dissolved serum, which distends and burdens the capillaries, the springs of action, restores that strength, which is ever to be desired and aimed at in the cure; not by cordials, &c. as is the common practice, but by evacuating that matter which thus oppresses the body and impairs its strength. But I would not be understood to discard bleeding entirely, which I have generally found serviceable in small quantities, and necessary to make way for other evacuations; but it cannot be depended on as a sufficient evacuation, to keep off the impending inflammation.

I. There are but two passages by which we can drain off the over-abounding serum or dissolved blood; to wit, the outer or inner surface of the body by means of sudorifics or cathartics; for the evacuation by urine is uncertain, and not always in our power. Sweating takes place in this as in most other pestilential diseases. By this manner of evacuating, we can drain off the greatest quantities of the dissolved humours, and make the largest evacuation that can be safely made, which seems to put a stop to the violence of the fever, and the danger of inflammation; but it must be observed, that the heat of the medicine, which procures this evacuation, often frustrates the good effects to be expected from it; for which reason the sweats ought to be increased to such a degree, that the largeness of the evacuation may cool the body more than the medicine which causes them heats it; to which plentiful dilutions ought to contribute. From a neglect of these necessary cautions, this method of sweating often contributes to bring on an in-

flammation, when antiphlogistics are really indicated. Two things ought to be observed and duly complied with, to render this method of cure safe and beneficial, and never detrimental or hazardous. 1. That there be no great dissolution of the blood, nor colliquation of the humours, when it is put in practice. 2. That the spasms and constrictions of the fibres, very remarkable, and easy to be discerned in this disease, and inflammation of the viscera, be not come on, when we give any heating sudorific medicine whatsoever. On this account it is, that this method of cure is not so successful in our cold winter and spring weather, when the humours are more sily, the fibres more rigid, and the body more dense and less perspirable, by which we do not sweat so freely and plentifully as is necessary; on which account I have known this method of practice brought into such disrepute as to be entirely laid aside; whilst at other times, in a milder distemper, it has been used successfully.

II. When the sudorific course has been neglected, or cannot be attempted with safety, on account of the sudden and violent symptoms, height of the fever, plethoric habit, or load of humours in the stomach and intestines, or other abdominal viscera, or has not been so successful as might be expected; then the only relief that I could ever find from any application, is from the mild relaxing chologogue apozems, taken frequently in such quantities as to keep up a constant diarrhœa, rather than speedy purgation, till there remains no further danger of an inflammation. This is often the first thing necessary to be done; for the great quantity of humours proceeding from the dissolution of the blood, which now possesses a greater space than when compacted into red globules, and the quantity of choler which is generally poured out of its ducts, joined with the other impurities of the first passages, which add much to its quantity and

ill effects: these, I say, cause such a turgescency of the morbid matter, as it is called, at the beginning, that nature is never able to rid herself of these two loads, unless they are partly drained off at first by vomiting or purging. This is the practice of both the ancients and moderns in like cases: for, in this case, sudorifics endanger an inflammation which can hardly be avoided in the use of them, wherever there is a plethora of the vessels, or any fullness of the body; for which reason, all those who abound with humours of another kind, or have a great proportion of fluids to their solid parts, stand in need of this timely evacuation: and this is the condition of most of your well fed Englishmen and other new-comers to America, who have not undergone the sudorific course of our summers

But it must be observed, that this evacuation is more necessary in this, than in most other fevers; even so as to become more beneficial than any other, as I have experienced, although it is generally neglected in other malignant fevers; for which reason, I shall sum up in a few words the principal reasons and observations, which show its usefulness. The abdominal viscera are the parts principally affected in this disease; but by this timely evacuation, their feculent corruptible contents are discharged before they corrupt and produce any ill effects; and their many emunctories and secerning vessels are set open, so as to allow a free discharge of their contents, and consequently a security to the parts themselves, during the course of the disease. By this evacuation likewise, great part of the offensive overabounding serum of the blood is discharged in time. The very minera of this disease proceeding from the putrid miasma, fermenting with the salivary, bilious, and other inquiline humours of the body, is sometimes eradicated by timely emptying the abdominal viscera, on which it first fixes;

after the discharge of which, a gentle sweat does, as it were, nip it in the bud. Where the primæ viæ, but especially the stomach, are loaded with an offensive matter, or contracted and convulsed with the irritation of its stimulus, there is no procuring a laudable sweat, till that is removed; after which a necessary quantity of sweat breaks out of its own accord; these parts promoting it, when by an obsterging medicine, they are eased of the burden or stimulus which oppresses them. Hence I have often seen a more laudable and copious relieving sweat break out after such a deterging medicine given even in the height of this disease, than after a sudorific. Premature evacuations are generally dreaded in most fevers, especially such as proceed from a depravation of the inquine humours of the body; but these contagious malignant fevers proceed from a venomous miasma received ab extra; which, like all other poisons, ought to be discharged as soon as possible, qua data porta. The morbid matter in other pestilentials may be most easily and conveniently discharged by sweats; but this fever requires discharges from those parts, which secern the most viscid humours from the blood, either to prevent or carry off the viscid humours which cause the yellow effusion, which we have shown to be bile, or of the nature of bile: and the rule for evacuations is, 'quæ educere oportet, quo maxime vergunt, eo ducito, per loca convenientia,' (Hippocr. Aph. 21. §. 1.) But bilious humours are only to be discharged by stools or urine, which are the passages by which nature rids herself of this disease, as we shall see below. (Galen. Com. in l. c.)

This is only the inverted method of the alexipharmic, in which we first sweat and afterwards purge; whereas in this method we make discharges of the redundant humours, which oppress the parts principally affected, after which sweat breaks out of its own accord, or is more easily pro-

cured by art. All concerned in the cure of this fever will find both these evacuations necessary; but which ought to precede the other, the skillful may be helped to determine from these considerations, joined to the following observations.

There are not wanting many other practical observations to support these reasons for timely purging in this disease. 1. This method I was directed to by nature herself. I observed that moderate, thin, bilious stools, raised by nature for a day or two, at the beginning, prevented in a great measure the yellowness at the height of the distemper, which then terminated by sweats. And endeavouring to imitate these efforts of nature, I obtained the same good effects, from the like stools procured by lenitives. This is the best guide and surest warrant for physicians to direct their practice by, whose business it is to imitate nature by art. 2. Several, treated in this manner, had no relapses, which all had here in Virginia in the winter and spring seasons, that were treated in any other manner. Does not the doctrine of Hippocrates confirm this practice? who tells us, that improper and untimely discharges in distempers, or those things that are left behind after a crisis occasion relapses. (*Epidem. l. 4. 1132.*) 3. Where the crisis is by sweat, relapses are dangerous and frequent; but where the bilious humours are carried off by stools or turbid ictitious urine, at any time in the disease, the relapse is but slight, and seldom or ever mortal. 4. In young persons under the age of puberty, of whom I have cured many, and in whom sweating cannot safely be attempted, this fever is as easily subdued, for the most part, and in the same manner, as their other fevers, which proceed from a load and corruption of the humours in *primis viis*, generally are; to wit, by absorbents, attemperants, and antispasmodics, min-

gled with clysters and lenitives, at any time in the disease; by these, the fatal convulsions and hemorrhages in those and other tender people are prevented. 5. Sweating can only be safely attempted in the first hours of the disease, whilst the matter is fluxile; which short lived opportunity is generally let slip, and sometimes does not offer; after which, the only security against an inflammation of the viscera, is to be expected from lenitives given in the remissions, but not in the paroxysms of the fever. But it must be observed, that however these evacuations may prevent, yet neither one nor the other cures such inflammations till after concoctions; and that purgatives are offensive on account of their stimulating, as sudorifics are for their heating quality; for which reason they ought not to be given after any signs of an irritation of the vessels or spasms about the præcordia, severe anxieties, contractions of the hypochondres, or convulsive motions of the stomach: and none but the mildest diluting laxatives are ever proper, such as whey made with cremor tartari, or tamarinds, potions of manna and rhubarb, or solutive syrup of roses, a mixture of rhubarb, sal. nitr. in broth or gruel, or aperient relaxing apozems given in divided doses.

III. The next thing necessary to be considered in the cure, is the concoction (as it is called) of the morbid matter, whereby to render the remains of the morbid humours which have not been carried off by previous evacuations, but keep up the fever, a yellow effusion or inflammation of the viscera, fit to be separated and expelled in due time by proper evacuation. We need not dwell so long on this, although of great consequence in the cure, as it is to be effected by the same means as in other malignant fevers, where the same indications prevail: but the chief thing here is to establish a

true indication of cure for this disease.* On this account, it will be necessary to consider what are the indicantia and state of the body and proximate causes of this disease, which I shall do only in general; each particular symptom and the various cases which occur in practice would require a treatise by itself to discuss them thoroughly. The following seems to be the state and condition of the solids and fluids in this disease from whence the indications of cure ought to be taken. 1. The fluids are manifestly dissolved from the beginning by the miasma of the disease, and are much more so by the effects of the fever succeeding it. 2. The blood is much accelerated in its motions, when it is thin, dissolved, hot, and acrid: to this succeeds an effusion of a rancid, oily, adipose humour, or a more pernicious, heated, acrimonious bile about the height of the fever. *Hinc illæ lachrymæ!* 3. The solids are not rigid, and the body dense and imper-spirable, as in most other acute continual fevers; they are rather lax than weak; the dissolved blood is not able to keep their diastole; but they are apt to be drawn into spasms and convulsions, as weak fibres generally are, by the heated, accelerated acrimonious humours, especially in the more sensible membrane about the præcordia. 4. Hence a stagnation or inflammation in those membranes, especially the stomach and contiguous viscera: which as it proceeds from a thin, hot, acrid blood, or bilious humour, is of the erysipelatous kind. This seems analogous to pleuretic inflammation in other acute distempers, and in like manner is produced from the effects of this fever. 5. These bring on an universal spasm or systolic motion of all the nervous membranous parts; hence the arteries are contracted or nigh to a con-

* *Id probi distinguendum et probi noscendum, &c. Bagliv. de Febr. malign*

tinued systole, as is felt by the pulse, which makes the dissolved blood, lymph, and bilious, oily humours stagnate in the extreme capillaries; whence mortification of the inflamed parts. From these causes likewise the blood will be drove out of the more rigid contractile parts; the muscles, &c. will be accumulated in greater quantities in the weaker, laxer glands, and in the more dilatable, spongy, viscera, the liver, spleen, pancreas, omentum, mesentery and lungs; whence, in the dead bodies, these parts were distended and gangrened, and the blood drove out of the other vessels into the *venæ portarum*, which proceed from, or tend to those softer viscera, where the circulation is slowest. But in all this the brain was not affected in the dead bodies, nor did it appear to be so in the disease, but by consent of the nerves and stomach: perhaps the rigid contractile *dura mater* and superior situation or distance from the stomach and *præcordia*, which are most affected, defends and preserves it. In these circumstances the following indications seem naturally to occur, besides the evacuations already taken notice of. 1. To prevent the dissolution of the blood by correcting the acrimonious salts of the peculiar miasma, heat, and biliary acrimony of the fluids, which seem to occasion it. 2. To relieve or guard against the spasms of the vessels. 3. To remedy the inflammation, and prevent the sphacelation of the viscera; especially those situated in the hypochondres. The particular remedies which I found most successful to answer these indications of cure, were the following: aqueous diluents are well known to be serviceable in all acute diseases; but besides their moistening, cooling, diluting quality, they are serviceable in a peculiar manner in this disease; they are generally earnestly desired and greedily swallowed, in large draughts, on account of the heat at the stomach, which draughts distend the stomach, that is often closed and con-

tracted; this loosens the spasmodic constriction, as the anodyne quality or pleasant sensation which such draughts afford, procure a pause from the grievous restlessness; but when the convulsed stomach acts on such a full load, it throws it off both upwards and downwards, by vomiting and purging, which evacuate that offensive humour, impacted on its tunics, or floating on its contents (as was observed in one of the dead bodies above,) that causes the worst of all the symptoms, the cardialgia and anxiety; so that such large draughts of grateful aqueous liquors should not be denied the sick in this disease. For I have seen them procure as much speed, relief, and security, as could be expected from opiates in many sorts of pain: but some would give them cold, as they are coveted, which is dangerous in inflammation of the viscera, (Alexand. Trall. lib. 12. c. 3.) particularly in an erysipelas of the stomach. But diluters alone are not sufficient in this fever. It is further necessary to guard against the heat and acrimony of the humours by attemperating, incrassating, cooling remedies, such as decoct. hord. oryz. absorbents, &c. &c. but above all the acrimonious salts of the pestilential miasma, which dissolved the blood, are to be corrected, which as they proceed, in all probability, from putrid animal substances, are best corrected and destroyed by acids;* which were found to be of service in this disease. But there is much in the choice of acids; the harsh, mineral acids, irritate and fret the stomach: the mild, native, vegetable acids, well diluted, only agree with it. Acids rather prevent than cure the inflammation of the stomach. Where

* Hales Hemast. p. 325. Boerh. Chem. vol. ii. p. 311. &c.

the retchings to vomit are great they should be sparingly used. Acids should not be given alone, on account of the stomach, but with a mixture of some alkaline absorbent or warming alexiplarmic; and in such a proportion as to make the mixture sub-acid and cooling; which mixtures agree with the stomach, and are more aperient. But acids are not to be depended on alone, as those who follow an empirical practice, and have a notion of their correcting and assuaging the heated bilious humours, pretend. They thicken the fluids, and stop and prevent those evacuations which seem necessary to carry off the fever, and expel the pestilential and yellow effusion. Nitrous medicines are to be used sparingly, unless mixed with camphor in small quantities.

But it is not these or any other method of cure commonly used, that will always prevent the mortification of the viscera, which ever seemed to be the fatal catastrophe of this disease; and was ever found to be in all the dead bodies that were looked into. For this reason it behoves every one who has a regard for the art, or welfare of mankind, to look out for new remedies, to prevent such a fatal issue, not only of this, but likewise of other pestilential diseases. When I first perceived that the event and tendency of this disease was to a mortification, I thought of the bark, the antiseptic virtue of which had been so well demonstrated and exposed to the world; and which I have known some instances of in Virginia. Had I at the same time known of its good effects in the small-pox, which I have been since informed of, from the *Edinburgh Medical Essays*, (as well as by Dr. John Fothergill in London, who advised me to the use of the bark in it, from the resemblance that this disease bears to the small-pox, and informed me of three cases of a disease like this in Minorca,) I should have been more bold in such a practice, which seems the only known way of snatching many

from the jaws of inevitable ruin. For the effects of the bark in gangrenes seemed to be to promote a laudable suppuration, which would avail but little in the parts affected in this disease. But we are informed (*Edinb. Med. Essays*, vol. 5th) that in the small-pox it promotes the maturation and concoction of the morbid matter, and abates the fever. This is what is wanted, when this disease tends to its fatal issue ; and I can assert from my own observations of both, that both the symptoms, causes and effects seem to be much the same ; at least not unlike in both these diseases, when they tend to their fatal issue, for want of this due concoction of the morbid matter, for which the bark has been successfully given in the small-pox. But does the good effects of the bark in that distemper proceed entirely from bringing a kindly suppuration into the pustules ? Surely there is nothing more wanted in all these malignant pestilential distempers, such as both these are, than to preserve the tone of the fibres and crasis of the blood, both which seem to be destroyed in these diseases, especially this I treat of, when they tend to a gangrenous state ; but nothing seems to be so effectual for this as the bark. It is the common practice to endeavour to remedy this deplorable case, or to satisfy this vital indication by heating cordials, as they are called ; the same was the practice in much the like circumstances in gangrenes from internal causes, before the more efficacious use of the bark was known. But these are the most pernicious of all medicines, even in these circumstances of this disease, as I have seen by many instances. It is true, in other fevers these stimulating attenuating medicines become necessary towards their decline ; when the mortal laxity of the fibres and grumosity of the fluids threaten a stagnation, even where they were little less than poisons at the beginning. Some such thing is wanting in these circumstances in malignant fe-

vers with dissolved humours, both to prevent this gangrenous disposition of the humours and sphacelation of the viscera, as well as to satisfy this vital indication which is most prevalent in them; but no medicine seems to answer; for these heating, stimulating cordials only further dissolve the broken texture of the blood, and instead of relieving sweats, promote colliquative evacuations, and occasion spasms and convulsions of the fibres instead of restoring or preserving their tone. But in these circumstances, in malignant fevers with dissolved blood, the bark seems to be the only promising remedy: but this, however, I should not have dwelt so long upon at present, had I not known the bark to be given in this distemper; to wit, about the height of the fever or state of the disease, when the fatal condition was just at hand, and that to the quantity of more than half an ounce of the powder in usual doses in a day's time; after which the person recovered, which would hardly have been the case in most other acute continued fevers, of the violence of this. I must own this is but a single instance, and not made with sufficient accuracy to determine so important a point; and I know the dangerous consequence of drawing general rules from particular observations, the bane of physic, and reproach of human reason: so that I cannot any further recommend or condemn this practice, but think it for many cogent reasons highly worthy the further consideration of the skilful; on which account I could not pass over this mention of it.

But whatever may be the effects of the bark in this disease, yet I know it to be often necessary and useful after it. There is a greater debility generally remains after the crisis, and the pulse is weaker and lower, than after any disease I ever saw; the solids seem to have lost their elasticity, and the blood its due crasis. This makes purging, to prevent a relapse, dangerous. At other times this fever, from an imper-

fect crisis, degenerates into a slow periodic fever, of long continuance. In these conditions, several lose their lives; but I have known others, who seemed to be in the like danger, to be saved by the bark: I have been informed by several judicious eye-witnesses, that this was the case of the soldiers and sailors in the late American expedition; great numbers of whom died in this lingering condition after the fever.

After the morbid humours are prepared or concocted, the next thing necessary to be considered, is the evacuation of them; in which three things are to be considered. 1. When any artificial evacuation is necessary to relieve or assist nature. 2. What kind of evacuations are most proper; and 3. The proper time for these evacuations.

As to the first, we must remember what we have above hinted; that about the time when the yellowness appears, or about the state of the disease, the pulse turns extremely weak and low, the debility is increased, and nature is unable to rid herself of any offensive burden, at a time when she stands most in need of it: this it is, that makes artificial evacuations necessary to assist the feeble efforts of languishing nature. It is true, the sole hopes of many, in these circumstances, are placed in cordials, to strengthen the body, as is the plausible pretence; and evacuations are then dreaded above all things, on account of the debility which it is feared they may increase. But the body is not to be strengthened, but by removing what weakens and oppresses it, which seems to be here the dissolved serous and bilious humours stagnating in the capillaries, or thrown on the viscera. And all these acute putrid fevers ever require some evacuation to bring them to a perfect crisis and solution, and that even by stools,* which must be promoted by art, where

* Una igitur alvi spontanea solutio atque perturbatio continuam febrem tuto ac perfecte judicat, &c. Fernel. *Feb. cur. Method.* c. 3.

nature does not do the business herself. On this account an ill-timed scrupulousness about the weakness of the body is often of bad consequence in these urging circumstances, for it is that which seems chiefly to make evacuations necessary, which nature ever attempts, after the humours are fit to be expelled, but is not able to accomplish, for the most part, in this disease. And I can affirm, that I have given a purge in this case, when the pulse has been so low, that it could hardly be felt, and the debility extreme; both one and the other being restored by it. Another thing which makes artificial evacuations the more necessary now, is the diffusion of a new morbid matter through the blood, which causes the icterus different from that which first brought on the fever, when nature is almost overcome by the conflict with the first. Evacuations are likewise the more requisite at last, if the necessary ones have been neglected at first.

The next thing to be considered, is the kind of evacuation to be promoted; the most beneficial I have always found to be procured by lenitive cholagogue purges. Sanctorius indeed tells us, that the matter of malignant fevers is discharged by insensible perspiration, which is the general aim of physicians to obtain in these kinds of fevers, in which they seldom consider that hardly any putrid continual fever comes to a perfect crisis by sweats alone.* But in this particular fever, whenever any yellowness, even in the eyes, appears, we are entirely frustrated in our expectation of any relief from diaphoretics, in order to carry it off. This icterus proceeds from a matter which seems to be too viscid to pass off through the narrow pores of the skin, and never goes off entirely and perfectly by any ways whatever, whether the contrivance of nature or art, that ever I could observe, but by a turbid

* Fernel. Feb. cur. Method. c. 8.

yellow lateritious urine or loose stools. The same observation is confirmed by Hippocrates, who adds to these salutary discharges, in an icterus coming on a fever, a plentiful bleeding at the nose. (*Epidem.* l. 1. § 3.) Nay, the fever itself, when little or no yellowness appears, is hardly to be carried off entirely without purging; for when this indication is neglected, when it first offers (all changes being generally sudden) the fever returns with exacerbations, like the putrid fever coming after an imperfect expulsion of the variolous matter in the small-pox; and as often proves mortal in this case, as in the other. It is true we do sometimes see the fever brought to an apyrexia without purging, when accompanied with little or no yellowness, but very seldom when it is; but even then the crisis is imperfect, and the distemper is subject to frequent and severe relapses; and often degenerates into a slow periodic and long continued fever which gradually wastes and consumes the body, when this necessary rule of practice is not rightly complied with in time.

And here I cannot pass over a further comparison of the method of curing this distemper and the small pox, in both which purging is found of equal benefit, much in the same circumstance. They both proceed from a subtile contagious miasma, which brings on the fever at first; towards the state or decline of which, another foreign, more viscid, ill conditioned, matter, gets into the blood; to wit, the variolous matter in one, or bilious humours in the other; which raises a new conflict from a different cause, which is hardly to be overcome but by evacuating this foreign matter by purging. The only danger of this evacuation in both diseases, which some complain of,* seems to proceed from the crude state of this matter, when it is either not

* Allen, *Synop. Medic.*

rightly prepared or duly determined to proper emunctories for an expulsion, like the febrile matter in other acute diseases. The proper time for this evacuation next to be considered, is the first signal remission of the fever, or abatement of the most threatening symptoms, after or about the state of the disease, which we have said, is generally on the fourth day here in Virginia; or when any signs of concoction appear in the urine, especially if it is yellow and turbid, or other signs which indicate purging in other acute distempers, are observed. (Vid. Helvet. Anim. Econ. p. 41) But if there is no exacerbation or paroxysm of the fever on this fourth day, which is generally a promising sign, and none of these symptoms appear which denote an inflammation, or threaten a gangrene of the bowels, then I have ordered a purge with signal relief and good effect in the height of the disease, before few or any of those signs appeared; thereby preventing the yellowness in a great measure, which was to be expected that or the next day; and obtaining a perfect and entire crisis, by copious sweats, ensuing after a few loose stools. It is true the necessary maxim, *cocta non cruda sunt medicanda*, ought to be had regard to in all diseases; but as little in this as in any other, on account of the necessity of evacuating the bilious humours, which can only be carried off this way. So that if a purge at this time could always be safely given, it would afford more relief than all the applications generally used; for the icterus and dangerous conflicts which it raises, are thereby in a great measure prevented, the good effect of which are so signal, especially if purging has not been used at first, that they are apparent to all who have ever seen the course and event of the disease without them. But in all acute diseases, there is great caution requisite in applying remedies of such signal efficacy; especially where the humours are dissolved,

the disease so severe and acute, and the debility so great as in this distemper. For as Hippocrates tells us in general. *Quod prodest, ob rectum usum prodest.* So where there is a critical dissolution of the blood, or collection of the humours, it is unsafe and prejudicial. At other times this fever is of a typhoid, which, as Hippocrates tells us, is not to be carried off, but by a cholera (*Coac. l. 4. aphor. 6.*) which I have seen verified more than once in this distemper. But the discharges in this, vomiting and purging, are rather of the colliquative kind; which colliquative discharge happens at other times; both which ought to be stopped or moderated; for which purposes I have found the same good effect from warm opiates, (*theriac. laud. liq. cum pulver. bezoard. absorbent. aq. alex. &c.*) as from purges at other times. So that there is no depending on any general method of cure in the different cases of this disease, however specious or successful at some times: but circumstances must be well considered and rightly judged of, by those who would avoid the imputation of Poeteus Neapolitanus. *Multi sunt morbi, in quibus, si medicus erret aliquando tamen parum, et quod vix notari possit, nocet: ubi vero obligetur magnus, fortis et periculosus morbus, tunc ipsius imperitia haud levia adfert incommoda.* Paraph. in Hipp. de veter. Medicin.

R E V I E W.

ART. I. THE LECTURES, *corrected and improved, which have been delivered for a series of years in the College of New-Jersey, on the subjects of MORAL and POLITICAL PHILOSOPHY, by the Rev. SAMUEL STANHOPE SMITH, D. D. LL. D. &c. &c.* New-York. Whiting & Watson. 8vo. 2 vols. Vol. 1st. pp. 324. Vol. 2d. pp. 386. 1812.

(Concluded from our last.)

HAVING now taken a survey of human nature, as composed of body and spirit, he enters into a more immediate analysis of its powers. These powers may be comprehended under the head of sensation, of sentiment, of imagination, of reasoning, of reflection, of volition, and of the moral principle. Sensation is either external or internal. External sensation is that perception which we have of objects without the mind, and their qualities, through the instrumentality of the corporeal organs of sense. Internal sensation, on the other hand, is the perception we have of the operations of our own minds by the inward powers of consciousness. Sensations also, are divided into those which are secondary, such as our perceptions of grandeur, beauty, proportion and harmony in objects. In treating on the nature of the external senses, and the manner in which they impart the knowledge of their objects to the mind, without attempting to explain the mode in which matter acts upon mind, which is probably one of the impenetrable arcana of nature, or adopting the ridiculous jargon of Hartley's vibrations, he assumes merely as a given truth, that

the plagues, has this remarkable passage: "La cause qui la propage et le foyer qui la conserve, se trouvent l'une et l'autre, chez les marchands frippiers à Constantinople." So that, according to this author, if the sale of old clothes were prohibited in that city, that terrible scourge might be arrested in its awful and deadly progress. The application of this remark is too evident to need further observation.

Nothing in this description is intended to apply to ships arriving from more northern countries, nor to ships of war. The writer has, in many instances, witnessed the active cleanliness of large ships to and from Europe, and along our own coast; and he has, with great satisfaction, observed the efficacious use of wind sails in this and other harbours. But the necessity of these judicious preventives, under such favourable circumstances, serve more strongly to enforce all the foregoing observations, when applied to such small, confined, and generally unhealthy vessels as are usually employed in the West-India trade, and the infectious kind of cargoes imported in them.

IV.

AN ESSAY on the MALIGNANT EPIDEMIC PERIPNEUMONY, which prevailed at Newtown, Long-Island, in the Spring of 1812—By VALENTINE MOTT, M. D. Professor of Surgery in Columbia College, Corresponding Member of the Medical Society of London, &c. in a letter to J. C. LETTSOM, M. D. &c. London.—Communicated to the Editors of the Register.

THE occurrence of epidemics ought to be carefully and faithfully recorded, for the instruction of posterity. Every age presents to us more or less of novelty, in the commencement, progress, and termination of pestilential diseases; we

need only refer to the historic page for a satisfactory illustration of this position. The history of the prevalence of epidemical diseases, would form a very interesting subject of inquiry. It is a theme, rich in matter, both curious and interesting, and very considerably instructive and important; and it is by the industry and diligence of our worthy and venerable predecessors, that so many invaluable legacies have been bequeathed to posterity; which will long continue as landmarks, or beacons, to direct the medical traveller.

Every attempt, therefore, however feeble and imperfectly performed, will be considered as praise worthy, if not substantially and practically useful. With this impression, I shall venture to give somewhat minutely, an account of a very malignant and fatal form of disease, which prevailed at Newtown, on Long-Island, in the spring of 1812, and which, from its character, I would call a Malignant Epidemic Peripneumony.

The weather, during the prevalence of this epidemic, was very remarkable for a great quantity of rain, and the easterly and north-easterly winds. For the space of more than a week, frequently at a time, the wind would be from the west in the morning, with a clear atmosphere, and by mid-day, from an easterly quarter; and if not attended with rain, the atmosphere would be loaded with a mistiness, accompanied with an unusual degree of chilliness. This peculiarity in the season, did not fail to arrest the attention of the most careless and common observer. As late as the first of fifth month, (May) but very little appearance of vegetation was observable, even in the warmest and most favourable situations; and on the third and fourth of the month, a rain and snow storm, occurred from the north-east, which was more than commonly severe and cold. After this kind of stormy weather, a great increase in the number of new cases was generally observed. The whole month was uncommonly cold and unpleasant; in-

so much that the common fruit trees of the season were not fully blown till the beginning of sixth month, (June) which is unparalleled in the memory of the oldest inhabitants among us.

This disease attacked all ages and constitutions, and was mostly confined to those districts, which were inhabited by the lower and more indigent classes : exceptions to this, however, now and then occurred. It was ushered in, in all cases by a very severe chill, which lasted for some time ; this was followed by a great degree of heat, pain in the back, limbs and head, and most intense pain in the chest ; great difficulty of breathing, and in some instances the oppression was so great as to threaten immediate suffocation, with violent cough, and expectoration of yellow matter, and generally very bloody. The secretion from the lungs, when not bloody, was so yellow as to stain linen on which it was received. The expectoration of blood was much greater than had usually been observed to take place in any peripneumonic affection. The pulse generally was small and frequent, and by no means tense ; skin hot and dry ; tongue white and moist ; bowels more or less relaxed, with nausea, and in many instances violent and repeated vomitings, attended from the commencement of the chill.

In some instances a profuse diarrhœa attended from the first attack, so as to exhaust the patient very much, accompanied with a most distressing nausea. In these cases, much less affection of the chest was observed ; still, however, sufficient to claim particular attention, accompanied with the yellow expectoration, and even blood.

After the lapse of one or two days, great prostration of strength would take place, without a comparative abatement in the oppression and distress at the breast ; which continued, though in a lesser degree, accompanied with an augmentation of the pain in the head, heat of the skin, and other symptoms of ardent fever. At this time, frequently a considerable

yellowness would be manifest in the eyes and face, and generally over the body; in some cases to as great a degree as was ever observed in the autumnal bilious remittent, or yellow fever of our cities. This bilious discolouration lasted through the whole course of the disease, and even during the convalescent state, which was generally very protracted and tedious.

It was very natural, when called to a patient labouring under the symptoms which have been enumerated, to deplete the sanguiferous system by bleeding, and that not very sparingly; especially in those cases where the peripneumonic affection was the greatest. Not only the symptoms would seem to warrant such practice; but the blood too, when drawn, exhibited the sizzly appearance, and buffy coat, though less viscid than common. But the effect of the bleeding upon the patient was not such as to warrant a repetition of the operation: once was enough, and in some, it is feared, more than enough, even when only three or four ounces were taken. It is a fact, not a little remarkable, that even so small an evacuation from the blood-vessels, as last mentioned, would induce the most astonishing prostration, with small and feeble pulse, &c. convincing the physician, before he left the chamber, of his error; though the evacuation seldom failed to give temporary relief to the distressing affection of the chest.

The state of the stomach and bowels was such as generally to forbid the use of evacuants, except of the mild or laxative kind; for even these, in some instances, would be followed by delirium, if they operated at all freely. However much I may be attached to the Hamiltonian plan of free evacuation from the alimentary canal, and from what I have seen in the practice of this learned gentleman, most certainly am; yet, in this disease, it ought to be used with the greatest care and circumspection.

As the most urgent affection seemed to be that of the chest, no time was to be lost in attempting to relieve it; and

for this purpose a large blister should be applied, and one sufficiently large to cover all the fore part of the thorax. This must be several times repeated; and it is better to re-apply it, than to promote a discharge from the first; and each plaster will be found to give great relief: indeed they appear almost the only remedies to relieve the thoracic distress before mentioned. To aid the plasters, we must now endeavour to excite a free discharge from the skin by perspiration. This is one of the most important indications in the treatment of this disease. To effect this object, in the fullest and most speedy manner, not only warm teas must be exhibited, but the external application of warm and relaxing means, must be resorted to. For internal use, a strong decoction of seneka and aq. ammon. acetat. as much as the stomach would bear; or small quantities of opium, ipecac. and camphor, and frequently repeated; together with the external application of the steam of warm bricks, wet with vinegar, and wrapped in flannel; or bottles of warm water, placed close to the patient in bed, and the warm bath,* were found the best calculated to produce this effect. When sweating is once excited, it ought to be kept up from twenty-four to forty-eight hours, without intermission; as the relief afforded to all the symptoms, never failed to justify the practice.

The exhaustion of the powers of life was so great in some instances, in a short time from the first attack, as was shown by a coldness of the extremities, weak and small pulse, and coma, that no time was to be lost in throwing in stimulating and cordial medicines; as toddy and wine whey, even though

* The sage Hippocrates, when speaking of the warm bath in his book on acute diseases, has the following words: "Convenit autem in totum magis peripneumoniis, quam febribus ardentibus. Nam dolorem lateris et pectoris at dorsi, balneum lenit, et sputum maturum facit, ac educit; et facilem spirationem reddit, et lassitudinem eximit, articulos enim et cutis superficiem mollit."

Hippoc. lib. de vic. rat. in morb. acut. Tom. I. p. 326

they might appear to be contra-indicated by the affection of the chest. If epispastics were previously applied, the pectoral affection never appeared to be aggravated by it; but, on the contrary, was relieved as soon as a general warmth was restored, and especially if accompanied with sweating. When the diarrhoea was profuse, the addition of a little tinct. opii to the decoction of seneka and aq. am. acetat. or the exhibition of a little solid opium, would generally keep it within proper limits.

As soon as the affection of the chest was removed by the means above mentioned, cordial and stomachic remedies were loudly called for; such as wine whey, infusion of camomile flowers, or decoction of quassia, which latter appeared to answer the best. The relief of this affection was accompanied with a corresponding abatement of all the other symptoms; the tongue became moist and clean; in fact, the patient would appear to be convalescent. The cough would now be troublesome, with the yellow expectoration, but not bloody; the whole body would be sometimes as yellow as an orange; and it was at this time the patient required the most careful nursing, owing to the most remarkable exhaustion of the powers of life. The cough was relieved by the tinct. opii camph. and decoct. senekæ, or the mistura sperm. ceti; but it continued to annoy during the convalescent state, which was as before observed, commonly lingering.

Its duration was very various. In some instances it proved fatal in the course of eight-and-forty hours, three and five days, and in some cases as late as the second and third week. In the protracted cases, death was always preceded by typhoid symptoms, accompanied with an urgent cough and expectoration. But in those that terminated the most suddenly, there were no typhoid appearances. May not death, in these instances, be occasioned by gangrene of the lungs, as has

been observed by some of the older authors ?* It observed the ancient law of epidemics, of being more severe and fatal in its commencement, than at its termination. The average mortality was about one third, and one in four that were attacked.

This disease continued to be very rife and fatal, till the beginning of sixth month, (June) when a number of cases occurred, in which there was but little difficulty and pain on breathing, and but little cough. In these cases, violent delirium attended from the commencement, with ardent fever, with scarcely the slightest remission for three or four days. In these instances the sickness at the stomach and diarrhœa were considerable, and the prostration that followed very great. They all yielded to the use of blisters, and the general sudorific plan that we have already laid down, without any typhoid state supervening.

The disease which has now been described, was not confined to the township of Newtown, but took a very extensive range through our state. It was prevalent in many places on the north side of Long-Island; mostly confined, however, to that tract of country which extends from Newtown to the town of Huntington. In the counties of East and West Chester, it has likewise prevailed; but Dutchess County, more than any other part of the state, will long recollect its dreadful and fatal ravages. The inhabitants of our own city, while they deeply sympathized in the distress and calamity upon their borders, were not free from consternation and dismay at home.†

* See Van Swieten's Commentaries, vol. 8. p. 261. Also, McBride's Practice of Physic.

† ———Terruit urbem;
Terruit gentes,———.

Hor, Carm. II.

As there is a great diversity of opinion, even among medical gentlemen, who have been conversant with the spotted fever, it will not, I hope, be deemed impertinent to subjoin, that I believe in the identity of the late disease in different parts of the state. I venture to do it, however, as it is predicted upon information that cannot be questioned: it is not from supposition or conjecture. The disease was prevailing through a great tract of country at the same season of the year, though no doubt in a slight degree differing from some peculiar local and individual circumstances, yet it was essentially and virtually the same epidemic. Huxham informs us, that he has known a catarrhal epidemic fever, in very cold and mountainous situations, to assume the nature of pleuro-peripneumony; whereas in very low situations the same has run into a slow nervous fever. The same popular disease therefore, reigning in different places, may require a very different mode of treatment.

We surely cannot denominate the disease which we have described, a pure or simple fever; or, as many have called it, spotted fever! If we look into Dr. North's book, on the malignant epidemic, which is called spotted fever, and which he has described with great accuracy and care, no one will hesitate to say, that the present epidemic is a very different disease. Dr. North has been at more pains than any of his contemporaries, in collecting and embodying a stock of important information, relative to this very extraordinary and novel disease. The annals of our country will have to record this new hydra, or monster, to be enrolled on the endless catalogue of human maladies. After contrasting it with the plague, scarlatina, cynanche maligna, &c. he is of opinion, that each has its peculiar shades and complexions, though they belong to the same family of diseases; and that the spotted fever is a new species of Typhus. In giving a nosological character, he says, "I think it ought not to be arranged under the order

phlegmasia, for the following reason: although in some few cases local inflammation has been induced by the disease; yet this has not oftener happened in this epidemic, than in other malignant fevers. Whether it more properly belongs to the order febres, or exanthemata, is not so clear."

Dr. Arnell states, that they did not bear bleeding, and the blood showed no buffy appearance. In enumerating the symptoms of the disease, no mention is made of any peripneumonic affection, as pain and difficulty in breathing, or cough, nor bloody expectoration; it attacked all ages, and proved fatal to six in seven who were affected; in some, as early as fifteen hours from the first attack, and from one to three days. Petechiæ appeared all over the body, and of a large size in many instances.*

Dr. Strong, in his Inaugural Dissertation on the spotted fever, as it appeared in the town of Medfield, Massachusetts, in the spring of 1806, and in Hartford and Windsor, in 1807, has taken great pains to describe the disease, having had many opportunities of observing it. From his essay, it appears, that the inhabitants of high and low situations are equally subject to it; and though there is some variety in the commencement, the leading symptoms are well marked.—“Wherever it appears,” says he, “in whatever manner it makes its approach, that debility, which is more to be dreaded than a strong man armed, is the most striking characteristic.” In another place, he says, the most distressing symptom, and one the most to be dreaded, is a peculiar sensation about the upper orifice of the stomach, which patients call “a deadly feeling, a death like coldness or faintness.”

In the Massachusetts Medical Papers, may be found a very detailed and minute account of the spotted fever, as it pre-

* See Dr. Arnell's account of the spotted fever, as it appeared in Orange County, in 1808-9, in the 1st vol. of the Medical and Philosophical Register.

vailed in different parts of the eastern states. The zeal and interest which the members of the Medical Society of Massachusetts have manifested in their investigations into the nature of this extraordinary and novel disease, will be a lasting memorial of their philanthropy and benevolence. In detailing the symptoms of this disease, they say, "The respiration is much and variously affected; in general it is difficult. Cough rarely occurs, and the difficulty of respiration has not commonly appeared to rise from an inflammation of the lungs."*

The cause, whatever it may be, which produces this new form of fever, must have a powerful and deadly operation upon the energies of the nervous system; more extraordinary than even the pestilence of the Levant. There is no example in the whole of medical records, as far as I know, of a morbid poison producing such sudden death, as we are told takes place in this disease.† The sudden and unexampled prostration of strength, together with the great subduction of animal heat, constitutes a very important and prominent feature in this new epidemic; insomuch, that Dr. North says, "most physicians who have had experience in it, consider their patients relieved from a most deplorable state, as soon as they get the surface of the body warm, by any remedies which may be in their power." The conclusion, we therefore think unavoidably follows, that this is altogether a new form of disease in the land;‡ and as Dr. North very properly says, may be considered a new species of typhus. No form of typhus which we have heretofore had described by the celebrated Dr. Cullen, the *Febris Nova* of Sydenham,

* Vide Massachusetts Medical Papers, vol. II. part 2.

† See Dr. North on spotted fever, and the Mas. Med. Papers, vol. II. part 2.

‡ Jam nova progenies cælo demittitur alto.

Virg. Eclog. IV.

Hic vero subitum, ac dictu mirabile monstrum

Aspiciunt;

Virg. Georg. lib. IV

or the *Lenta Febris* of the great Roman physician Celsus, can be compared to this new monster.

The epidemic of the present season has not been a new form of disease. It was certainly different in its character from the type of diseases which have been common among us for a series of years, which has induced some to consider it unprecedented in the annals of medicine. The records of our own country, will, however, furnish us with an account of the same form of disease, as it prevailed at Huntington, on Long-Island, in the winter of 1749, with great and alarming mortality.* By most of the European writers of the last century, we find many diseases described of the same malignant peripneumonic character, which may be identified with the present, without doing any violence to nosological arrangement. We may go still farther, and say, that from the time of the Coan oracle and genuine interpreter of nature, to the present day, accounts of the same form of disease may be found scattered through the mouldy pages of antiquity.†

It may be difficult for some to subscribe to our opinion, that it is a phlegmasial disease, on account of the diarrhœa, and more than common pungency of the heat upon the surface of the body. We all very well know, that such symptoms are

* See Dr. John Bard's essay on malignant pleurisy, in the *Medical and Philosophical Register*, vol. I.—One of the oldest and most respectable inhabitants in Newtown informs, that in 1749, it prevailed more generally, and with greater mortality in Newtown, especially among the old inhabitants, than it did at the present season. He recollects perfectly well too, its great mortality at the same time about Huntington.

† The following diseases, though described by different names, are closely allied to the present—viz. The *peripneumonia putrida*; *thesis parisiens*, 1752; *peripneumonia maligna*, of Sauvages; *peripneumonia pestilens*, of Schenkius; *peripneumonia typhodes*, Deplaigne, *Journ. de Medicine*, Septembre, 1757; *pleuro-peripneumonia epidemica aumala apud Normanos*, Marteau de grandvilliers observante, and the *pleuritis putrida* of Sauvages. Of the *peripneumonia pestilens*, Sauvage observes, "*Peripneumonia pestilens Europam ita devastavit anno 1348, ut vix decima hominum pars superfuisset, si credamus Gallo et Schenkiio; ea intra tres vel quatuor dies trucidabat.*"

Sauvag. *Tom. 2. p. 458.*

by no means common to peripneumonic affections, especially as they appear in our country; and it is probable that the oldest of the profession among us, have no recollection of having ever witnessed a similar assemblage of symptoms. To corroborate our opinion, we shall adduce the experience of both ancient and modern times, which will irresistibly show that these symptoms have attended such forms of malignant peripneumonia, and have been in their consequences, either terrible or fatal. It did not escape the vigilance of the sagacious Hippocrates, for he says, “A pleuritide aut peripneumonia occupato, alvi profluvium accedens malum.”*

The attention of a careful and accurate observer, was immediately arrested by the peculiar pungency of the heat upon the surface of the body; as great as was ever experienced in the most malignant and ardent forms of fever. This extreme degree of heat of the skin, some of our best writers have considered a very prominent feature of typhoid forms of fever; and have expressed their ideas of it in different ways. Dr. Moore, when treating of typhus, says, “on pressing the skin of the patient, a sensation of a peculiar penetrating heat remains on the hand for some minutes after; whereas the heat communicated by the skin of a patient in an inflammatory fever, is more transient.” Sir John Pringle observes, that he has been sensible of an uncommon ardour, leaving an unpleasant sensation in his fingers for some minutes after feeling the pulse.† Dr. Huxham says, “there is a peculiar biting heat in malignant fevers.”‡ Dr. Wright has used the same language.§

Whatever may be the cause, it is certain, that there was this peculiarity in the form of the peripneumonia of the pre-

* Hippocrat. Aph. 16. Sect. 6.

† Moore's Medical Sketches.

‡ Pringle on Diseases of the Army.

§ Huxham's Works, vol. 2.

¶ Annals of Medicine.

sent season; which will warrant the conjecture of a febrile influence in the constitution of the atmosphere; but in what way this exists, or how it operates, is entirely beyond the reach and scrutiny of inquisitive man. Probably the season of the year only, determined the commotion or irregular action, induced by this epidemic influence upon the lungs, thereby producing a mixed form of disease. Such was its complex and fatal character, that it required all the vigilance and care, which the justly celebrated Heberden enjoins in febrile diseases. “*In omni febre oportet vigilare, et quicquid mali oriatur, idoneis remediis succurrere.*”*

In addition to the above mentioned symptoms, we find that petechiæ and vibices, have been common in this form of peripneumonia, as it has prevailed in England. This any one may be satisfied of, by perusing the works of that careful and accurate observer, Dr. Huxham. A peripneumonic fever, which was very pestilential, raged and carried off numbers in 1746. There was a great load upon the breast and precordia, accompanied with violent pain of the head, and soon after delirium. The expectoration was very frothy and bilious, and proved of little service to the patient. Some were seized with profuse and weakening diarrhœas, and a suppression of expectoration, and the consequence was always terrible. In his essay on fevers, he says, “*In malignant pleuro-peripneumonies, and peripneumonies, I have too often seen, and been sorry for very untoward mistakes in this matter, particularly in the years 1740, 41, and 45. And therefore, though the first bleeding may be very proper, the subsequent may not be so, nay, pernicious.*† In another place, when speaking of certain peripneumonies which will not bear bleeding, we find the following remarks:—“*And I have observed the same in*

* Vide Heberden's Commentaries.

† Vide Essay on Putrid Malignant Fevers, vol. 2.

several epidemic peripneumonies, particularly in the latter part of the year 1745, and in the beginning of '46; during which we had an epidemic peripneumony, in which, after a second bleeding, (and even sometimes after a single bleeding) the pulse and strength of the patient sunk to a surprising degree; and they ran into a sort of nervous fever, with great tremors, subsultus tendinum, profuse sweats, or an atrabilious diarrhœa, with a black tongue, coma or delirium; though at the bleeding the pulse seemed to be full and throbbing, and the pain, cough and oppression, so very urgent as to indicate bleeding very strongly."* Again, he says, "It was surprising how much the pulse and strength of the patient sunk after bleeding in such cases: with no small concern and astonishment, I several times observed a vast anxiety, fainting, cold sweat, and a thready intermitting pulse, very soon succeed it; though at the very beginning of the fever, and when the pulse seemed strong and throbbing before. I have seen this even in pleuro-peripneumonies, where the pain of the side was violent, the load at the breast great, and the cough considerable; otherwise the peripneumonic appearance might had been imagined to be a mere symptom of a malignant fever." I am very sure, says he, this putrid peripneumony never had a second bleeding with advantage; seldom indeed the first, unless there was some considerable degree of firmness and tension in the pulse.†

The same form of disease, in all probability, is alluded to by Lancisi, and afterwards by Baglivi, when they enjoin the following caution as to bleeding:—"In pleuritide, peripneumonia, &c. si in sanguine è vena secta extracto non appareat in superficie crusta alba pessimum; si vero in altera sanguinis missione incipiat apparere, bonum; contra, si in secunda ne

* Huxham's Works, vol. 2.

† Essay on Peripneumony, vol. 2. p. 211.

quidem apparebit, abstineto statim a sanguinis missione, aliter interficiet agrotantem.”*

Dr. M'Bride, in speaking of the fallacious appearance of the buffy coat in pneumonic inflammations, and that there are inflammations where this crust is never seen, says, “but on the contrary, the blood is found in a broken and dissolved state, and the patients bear bleeding as ill as they do in putrid fevers.”

“But when these inflammations take place in constitutions where the crisis of the blood has been previously injured by a putrefactive acrimony, or where they are complicated with fevers occasioned by infectious miasmata, such as have been formerly described, then the symptoms of extreme weakness and dejection, sickness, vomiting, petechiæ, and delirium, will be found superadded to the pain in the chest, cough, oppression, and difficulty of breathing.”

“These complicated pleurisies and peripneumonies are constantly mortal, because the extreme weakness and dejection, hinder the large and repeated bleedings, which are the only things capable of removing the inflammation.”

“In prisons, hospitals, and transport ships, where infectious putrid fevers prevail, it is not uncommon to meet with these malignant peripneumonies, as the reader may see in Huxham's *Essay on Fevers*.”

“They have also,” he observes, “been found to rage epidemically, in certain seasons, in different countries of Europe, and appear to be occasioned by a most corrosive species of acrimony settling on the lungs, which in a short time produces gangrene, not conquerable by either art or nature.”†

Dr. John Bard, (whose unsullied integrity and professional reputation, united with the greatest urbanity of deportment,

* *Caput de Pleuritide.*

† See Dr. M'Bride's *Practice of Physic*, 4th.

conciliated and endeared him to all; whose name will enkindle the most pleasing recollections; a name that will be enrolled on the imperishable annals of our country*) has left us a very valuable essay on the malignant pleurisy, which was very fatal at Huntington in 1749. Though this paper does not contain so fully as could be wished, an account of the symptoms and method of treatment; yet we presume to say that it was the same disease as the epidemic of the present spring. It is most consistent with strict nosological arrangement, to denominate the disease, which has been the subject of our examination, a peripneumony rather than pleurisy; and which, from remote antiquity, has been considered the most dangerous; though commonly, as Celsus correctly observes, has more danger than pain: "*Id genus morbi plus periculi quam doloris habet.*"†

The symptoms of the disease, as they are enumerated by Dr. Bard, warrant this opinion; for we have his own words that they were of a peripneumonic character, as will be seen by the following paragraph, which contains all that he has said of the symptoms and method of treatment, and which we shall quote to exhibit more clearly its identity with the late epidemic.—"The patient," says he, "in this malignant pleurisy, is first seized with a shivering rigour, which is soon succeeded by a pain in his back and head, an early disposition to vomit, with great oppression and anxiety. Soon after the fever is formed, these appearances are followed with an acute pain in the breast and side, resembling peripneumonic

* In speaking of this venerable physician, we are reminded of what the great historian Tacitus, has said of his illustrious father-in-law Agricola, and think it not inapplicable to the present occasion.—"*Finis vitæ ejus nobis luctuosus, amicis tristis, extraneis etiam, ignotisque non sine cura fuit. Vulgus quoque, et hic aliud agens populus, et ventitavere ad domum et per fora et circulos locuti sunt.*"

Tacit. Vit. Agric. Tom. 2. p. 301

† Vide Celsus, lib. IV. cap. 7. p. 154. de morb. pulmon.

ymptoms, attended with a laboured and painful respiration, a frequent cough, by which a crude, glazy, frothy spittle, slightly tinged with blood, is discharged; light deliriums through the whole course of the disease, not constant, but frequently returning; the tongue for the most part parched and dry; but the skin inclined to be moist and sweaty, which, if encouraged, the skin and coats of the eyes become extremely yellow; the blood appears rather dissolved and thin than viscid; the pulse in most cases soft and frequent. This disease generally ends in the death or safety of the patient on the fifth day, sometimes on the third or fourth, from the invasion of the distemper. In those that have died, it has been observable, that some hours before their death, they have recovered their senses, and appeared easy, but soon after have unexpectedly and suddenly expired. Most of these symptoms, together with the time it takes in going through its stages, are similar to the stationary fever, excepting the pain in the side, which appears to me to arise from the acrimony of the disease, which (in its simple state used to be thrown upon the stomach and bowels, producing violent pains, inflammation, and sometimes mortification of the parts) is by the present disposition of the air, and season of the year, favouring the production of an epidemic pleurisy, determined upon the pleura and lungs, and produces its tragical effects upon these organs. It is further observable, that the disease is aggravated by the common method of treating an essential pleurisy, and is found to be relieved by sweating and diluting methods, which is a prevailing argument to consider it in this light, as that method was always found to be the most successful in curing the original fever; of which kind I suppose this to be, and the pain in the side and breast only accidental symptoms.”†

* By the stationary fever is meant the yellow fever of our cities.

† See Dr. John Bard's Essay, Med. and Phil. Register, vol. i. p. 417.

A malignant peripneumony prevailed in the neighbourhood of Burlington, Vermont, in the winter and spring of 1810, with very considerable mortality. It run its course generally in about six or eight days, ending either in death or a favourable crisis. It predominated over all other diseases, for no person became sick without having some pain in the breast, side, or shoulder; it seized very suddenly in most instances, without being preceded by any premonitory symptoms.*

In giving to the public this little essay on an epidemic disease, I have no preconceived theory to subserve, a predilection for no particular or favourite doctrine; my object has been purely the love of truth, the advancement of the healing art, and the welfare of mankind. With this belief, I shall always rejoice in recollecting the classic words of the celebrated Pliny, “et quatenus nobis denegatur diu vivere, relinquamus aliquid, quo nos vixisse testemur.”†

New-York, 7 mo. 15th, 1812.

* See an extract of a letter from Dr. Powell, in North on Spotted Fever, p. 38.

† Plin. Epis. lib. 4. epist. 7.

III.

OBSERVATIONS *on the* FEVERS *of* NORTH-CAROLINA.
By Doctor JAMES NORCOM. *Communicated to* Doctor
 D. HOSACK.

LETTER I.

Philadelphia, March 30th, 1810.

DEAR SIR,

Not having received your's of the 23d instant, until the day before yesterday, I had it not in my power to reply sooner. But I hasten now, as far as time and recollection will serve, to answer *some* of the more important queries which you have proposed to my consideration. To answer *all* of them correctly or satisfactorily would require more experience, and a greater talent for observation than I can boast. However, all that I can distinctly remember relative to the object of which you are in pursuit, I will cheerfully communicate; and, as I presume any opinion or speculation of mine will be as useless as it might be visionary or erroneous, shall confine myself to the relation of such facts and circumstances as have fallen under my own immediate observation.

Edenton, the place of my residence, and the principal scene of my practice for ten years past, is a little seaport town in North-Carolina, situated on the north side of Albemarle Sound, in one of the eastern districts of the state. It is nearly surrounded by a country which is for the most part low and swampy, and in which there is occasionally to be found a great deal of stagnant water,

rendered offensive by dead vegetable matters that decay and putrefy in them during the heat of summer. Our summers, as regards their temperature, are extremely irregular: sometimes being pleasant throughout, and sometimes marked with intemperate heats and sultry weather. The hot weather generally sets in about the last of May, and ends, sooner or later, in the month of September; though we often have some days in April and October that are exceedingly warm. The mercury, in our hottest months, commonly fluctuates between eighty and ninety degrees of Fahrenheit's thermometer in the shade, if observed at three o'clock in the afternoon. For a few days together it sometimes rises to ninety-two, three, four, five, and now and then as high as ninety-six or seven. Sometimes, on the other hand, for a day or two, it will fall to seventy-two, to sixty-eight, six, four two, and once in a while below sixty. The greatest degree of heat experienced in this part of the state, takes place generally in June about the solstice; but that which is by far the most disagreeable and oppressive, which is most uniform, and continues longest, occurs in August and the first weeks in September. The same variety is observable in our seasons with respect to rain. Sometimes we have the fervours of summer tempered with regular and refreshing showers; sometimes they are characterised by a succession of gusts or tornadoes, with thunder and lightning, and cataracts of rain; and at other times we have frequent copious distillations every day for weeks together, deluging the country, sweeping away bridges, and drowning our crops in every direction. Then again we have summers extremely dry; insomuch that even the meadows and marshes lose their humidity, vegetation of every kind declines, and the earth presents

a surface as parched and dreary as the plains of Hindostan. There is no particular time when rain falls, or is to be with certainty expected. Sometimes it descends in the greatest quantity in June and July. Sometimes in August and September; but it has always appeared to me that August, taking it altogether, and one year with another, is the dryest and warmest of the summer months. In our dryest and wettest seasons we are most exempt from bilious fevers of every description, and summers uniformly wet or uniformly dry, have invariably been remarked in every respect to be the most healthy.

The annual remitting fever of Edenton, and the country in its vicinity, usually begins with the month of August; and *I* have remarked that the most malignant cases always occur in this month or during the hot weather of September. As the autumn advances and the heat decreases, fevers of every grade seem disposed to assume more and more the character of intermittents, which generally conclude the sickness of the season. The remitting fever with us, as far as *I* have been able to ascertain, is most fatal in seasons *tending* to dryness and accompanied with unusual heat. In its character and symptoms it is as various as the circumstances of climate and season under which it exists. Sometimes persons are seized violently without any previous indisposition, with a chill, or mixed sensations of heat and chillness that last for an hour or two, and are succeeded by a severe fever with pains in the head and back, a full, hard, quick, and bounding pulse, great thirst, a hot and dry skin, hurried respiration, with redness or a muddy suffusion of the eyes, and a disposition to delirium. The stomach, in this form of the fever, does not seem to be affected with much

sickness or nausea; yet vomiting is a frequent occurrence, and it is with difficulty that a patient can retain the least particle of food whatever. A sense of heat or burning is generally complained of, which is very distressing, and occasions every thing to be thrown up that is swallowed, if it contain stimulus, or be in any way substantial. The exacerbations of the fever are oftenest quotidian, returning generally in the afternoon, and the intervals short, with an imperfect remission, without sweating, or any considerable abatement of pain. The most successful mode of treating this inflammatory or malignant remitting fever, is by bleeding, purging, emetics, diaphoretics, and diluents, adapted, in quantity and continuance, to the circumstances of the case. The bark is a medicine which here does little or no service: on the contrary, I have known it do much harm, by increasing the troublesome affection of the stomach, which never fails to aggravate the most lenient form of the disease. In this fever we are in the habit of giving bark to remove debility and exhaustion, which are its consequences, but seldom with a view of stopping or curing the disease. Mercury is a remedy to which we are obliged occasionally to resort in the cure: I have never done good with it myself, except in the decline of the fever, after plentiful evacuations.

Another form of remitting fever, which is the true *bilious* remittent of our climate, comes on with a distinct chilly fit, of greater or less duration, and is succeeded by the ordinary symptoms of fever, with a frequent, full, and soft pulse, such as may almost always be felt in the paroxysm of an intermittent. It is not accompanied with much acute pain, but great aching and restlessness, nausea

or vomiting with ejections of bile, or matter exhibiting a bilious appearance. The type of this fever is generally that of a double tertian, having an exacerbation one day in the afternoon, the next, in the evening. Its remissions are more distinct than those of the inflammatory remittent : it seldom requires bleeding ; and after the exhibition of proper intestinal evacuants, invariably yields to the bark. It is rarely fatal, and when it is, seldom terminates in less than from ten to sixteen or seventeen days. Towards its close it sometimes puts on the garb of typhus, and does not end in death, or a recovery, in less than from twenty to thirty days. The fever last described is that which we usually meet with, which affects the greatest number of persons at a time, and is the least mortal of any of our continued fevers. Neither the inflammatory nor the bilious remittent, is very fatal ; the former, however, is much the more so, in the proportion I should suppose of at least three to one. It either ends fatally in from four to eight or nine days, or favourably somewhere between the eighth and thirteenth, but is not unfrequently protracted, to a later period : the fatal issue generally occurs early in the disease.

The tongue in the bilious remittent is commonly furred and yellow ; the skin likewise exhibits a yellow hue, which increases as the fever progresses : whereas in the inflammatory remittent, the tongue exhibits the common febrile fur in most cases without yellowness, and the skin is hardly ever discoloured until about the close of the complaint. In two or three instances I have known the surface of the body to turn yellow soon after death, from the inflammatory remittent, when not the smallest discolouration had been observed before. The vomiting in

one of these fevers, or forms of fever, (which you please,) is different from that which attends the other: In the first it occurs with little nausea, or sickness; is seldom attended with bilious discharges; affords scarce any relief, and is always increased by bark and stimulants. In the last, it is preceded by great nausea, attended with large discharges of bile, gives the patient relief, and is very often to be removed altogether with bark, aromatics, and cordial drinks. Hemorrhages very rarely occur in either of these fevers; at least, they have seldom occurred in my practice. In a case or two I have seen blood effused from the gums, though, in which form of the disease, I do not now recollect. In a few days I hope I shall have leisure to furnish replies to your other questions, which I will certainly do very soon. In the mean time with the best wishes,

I am your's, &c.

JA. NORCOM.

LETTER II.

Philadelphia, April 8, 1810.

DEAR SIR,

Most of the questions you proposed to me in your letter of the 23d ult. I endeavoured to answer in my first reply. Some of them, however, have been neglected; but shall be referred to, if not fully answered, in the additional remarks I have now to offer.

Respecting the utility or the efficacy of emetics, in our remitting fevers, I presume a few words will suffice, af-

ter what has been said already. In the inflammatory remittent, attended with burning, heat and oppressive anxiety about the precordia, neither spontaneous nor artificial vomiting appears to do good : the first does not often occur, and when it does, affords no relief ; the last is seldom practised, and when it is, bile is not commonly discharged, or the patient materially relieved by the operation. On the contrary, emetics, in many cases in which I have prescribed them, or known them exhibited, have increased the affection of the stomach, and exasperated the symptoms of the disease to such a degree, as to induce a determination in my mind never to give them again in this particular form of it. In the bilious remittent, vomiting is a remedy of the utmost importance, and, if had recourse to in the beginning of the disease, never fails to do great service. Here, likewise, spontaneous vomitings, *though they sometimes go to excess and do mischief*, are generally serviceable. The two grades, forms, or species of fever which I have described are rarely found to prevail extensively at the same time or season of the year.

During the prevalence of the bilious remittent, we now and then meet with cases marked with the symptoms, and requiring the treatment of the inflammatory remittent ; and *they occur, with us at least*, principally among strangers, more especially the natives of the northern and eastern states. But the position will hardly bear to be reversed ; for I have generally observed, that during the prevalence of an inflammatory remittent, though we sometimes see cases that are considerably bilious, symptoms of inflammatory diseases almost invariably attend and call for the use of antiphlogistic remedies. From the bilious remittent of Carolina, no age, sex, constitution, nor condition is exempt. To the inflammatory remittent, the

young, the robust, the plethoric, and *strangers* are peculiarly subject; and these last are oftenest the victims of the disease. Both these forms of fever are most severe and fatal, as I think I remarked before, about the latter end of summer or the beginning of autumn; that is, in proportion to the number of persons affected: yet from the much wider prevalence of their milder grades in the variable weather of autumn, the absolute number of deaths will, upon the whole, sometimes be the greatest in this latter season: and hence it is, that strictly speaking, when we have the most sickness, we have comparatively the least mortality!

I am not quite certain that I have ever seen *the* black vomit in any of our endemic fevers; but a vomiting of black matter of various descriptions is no unfrequent occurrence. In 1799, when we had a true yellow fever in Edenton, I saw the genuine black vomit in several cases; but I do not believe I have ever seen *exactly* the same thing since: though I confess I have seen perhaps half a dozen cases in which my suspicions have been strongly excited. Hemorrhages from the nose and gums are occasionally met with in protracted cases ending fatally; and I remember one case of a malignant nature, in which a bleeding from the mouth took place, that ended in death in three or four days. Glandular swellings, so far as my observation has extended, have not been among the characteristics of any of our fevers. In most of the fatal cases of inflammatory remitting fever which have fallen under my notice, the heat of the skin has continued intense, until a short time before dissolution, and the patient has expired in a paroxysm or exacerbation of fever. The bilious remittent, when about

to prove mortal, in a majority of instances, puts on the garb of typhus, and terminates with the symptoms common in the last stage of that disease.

I have thus, sir, given you an account of two forms of fever, as they appear in the tract of country to which my practice has been confined ; and all the continued remitting, or what are usually denominated bilious fevers, incident to our climate, *seem to me* to be only modifications, or variations of these two original and distinct diseases. Neither the inflammatory nor the bilious remittent always attack and progress precisely as in the history I have sketched. They both vary in their modes of attack, in duration, in violence, in the remissions and exacerbations that attend them, and in many of their less essential symptoms. Nevertheless, I feel persuaded that, from the description I have given, the peculiar and distinguishing character of each will be sufficiently manifest.

Very respectfully,

JA. NORCOM.

IV.

CONJECTURES, *respecting the NATIVE CLIMATE of PESTILENCE; in a letter to the editors of the Medical and Philosophical Register.* By an OBSERVER.*

THE frequent recurrence of a pestilential fever, in New-York and Philadelphia, since the year 1793, has

* Communications from the learned and ingenious writer of this paper will always be acceptable, and are solicited by the editors.

become the subject of painful apprehension to many of our fellow-citizens. They deem it probable that the golden age of our seaport towns is past, and that we have entered upon the age of clay. The ills of life, that cannot be avoided, are confessedly very numerous ; and there is not any reason why we should create imaginary evils. I do not call an apprehension of the yellow fever an imaginary evil ; nor should we neglect all prudent and practicable means, by which the frequent recurrence of that disease may be prevented : but I deem it improper that we should afflict ourselves by supposing that our lots are cast in the very *latitude of pestilence*, and that our climate is now beginning to shew that one of the greatest scourges of humanity is *its natural production*.

It is alleged, as I presume, that we live in the latitude of pestilence, because the plague, which like the yellow fever, is a pestilential disease, has long infested the western parts of Asia, from the thirtieth to the forty-second degree of north latitude. That conclusion, as I think, is not fairly drawn from the premises.

There are some diseases, as we know, that chiefly prevail in cold climates ; and there are other diseases that are the natural productions of a warm climate. Diseases of this kind are produced by a long continuance of heat, or of moisture and heat, whereby the quality of animal and vegetable productions, suspended in the atmosphere, are essentially changed, so that they become hostile to the human constitution, and produce the most fatal complaints. The yellow fever and the plague are generally thought to be diseases of this class. There are some remarkable circumstances in which those diseases resemble one another.

They are both very fatal.

They both depend upon a certain degree of heat. The plague seldom spreads when the degree of heat is below sixty or above eighty degrees, in Farenheit's thermometer. The yellow fever seems to require a long continuance of heat at eighty degrees to its origin. It may be communicated at a lower degree, but it is effectually destroyed by frost.

Both of these diseases require, beside the degree of heat mentioned, a certain diseased constitution of the atmosphere towards their propagation. Neither of them is contagious in a pure atmosphere.

It does not follow from either of those circumstances, that any part of the globe, above the tropics should be deemed the latitude of pestilence. The contrary, as I think, is clear ; for no disease that is constantly destroyed by cold can be indigenous in a climate where such a degree of cold prevails every year. From this it must follow, that though the yellow fever may exist at all times within the tropics, it must be counted an exotic plant in the state of New-York.

Perhaps I shall be told that the plague, though it cannot endure a high degree of heat, such a degree as prevails every year in Egypt, yet it is the natural production of that country. I am aware that any objection to this opinion may be deemed paradoxical ; yet I question whether a particular zone or broad belt of this globe, extending from the 29th to the 43d degree of latitude, can with propriety be called the latitude of pestilence. There was

a time when Egypt, that most unfortunate of kingdoms, was more populous than it is at present, and contained larger cities than Cairo ; but it was not in that age the seat of pestilence. We should infer, from the rapid increase of the Israelites in that country, that the climate was very healthy. But the testimony of Herodotus is clear and pointed on this subject. He says, that “ after the Africans, there is no people in health and constitution to be compared with the Egyptians. To this advantage, the climate, which here is subject to no variation, may effectually contribute.” While the Egyptians were governed by their native princes, and while they continued to be industrious, Egypt was a healthy country. But after those people had been reduced to a foreign yoke, the spirit of enterprise forsook the land ; their canals were neglected ; the waters stagnated on the surface, and pestilential diseases were promoted. We have no correct information when it was that the disease, emphatically called the plague, first appeared in the world. It seems to have originated long before the small pox, but the native place of neither can be traced. The Carthaginians were afflicted by the plague at least two thousand three hundred years ago. Thucydides speaks of a plague that wasted Athens, about 2280 years ago. Procopius speaks of a plague that appeared, about the 540th year of the Christian era, which threatened the very existence of the human race. It did not come, as he says, upon one part of the world alone, nor in one season of the year. It afflicted the whole world, and all conditions of men, sparing none. Some took it in summer, and some in winter. It spared neither island, cave, nor mountain.

In the year 1346, a plague began in the northern parts of China, thence spreading through Asia, it crossed into Europe by the way of Constantinople ; thence it traversed Greece, Italy, Germany, France, and England. In the year 1771, the plague raged in Moscow, in the 55th degree of latitude. England is not considered to be in the latitude of pestilence, but the plague has often visited that island, since the English have been concerned in the Levant trade. Marseilles, in the 43d degree of latitude, has been visited by the plague, ten or fifteen times, since the inhabitants of that city began to trade on the coast of Asia Minor ; but we cannot, with any degree of propriety, allege that Marseilles, more than other parts of France, is the native place of pestilence.

It was observed above, that the plague and yellow fever resemble one another in the circumstance of being infectious, whence it would follow that both diseases may be imported. I am aware that it was long disputed, both in England and France, whether the plague itself be infectious. Although the plague, when it has appeared in Europe, always began in a trading city, that lately had some intercourse with a town or city in which the plague then prevailed, yet it has been obstinately contended, in every case, by some of the faculty, that the disease was not imported.

The plague appeared in Moscow when the Russians were at war with the Turks, and goods were imported that had been taken by plunder, from infected cities ; but there were men who questioned whether the disease had been imported. When the plague breaks out in Cairo, Aleppo, or any city near the coast of Asia Minor,

the European merchants residing there, immediately shut themselves up in their houses, during the continuance of the disease. It is admitted that none of those who are shut up and do not touch any infected person, ever take the plague, though they converse every day, looking out of their windows, with hundreds who have the plague. They who touch infected persons, seldom fail to take the disease. These circumstances notwithstanding, there are men who zealously contend that the plague is not contagious. Gentlemen who allege that the plague is not contagious and that it cannot be imported, support their opinions by observing that the plague often breaks out in healthy cities, that have been carefully guarded, and where there cannot be any reason to suspect importation. This argument supposes that laws, in every case, are well executed ; that officers always do their duty, and that there are no smugglers. But it has been fully established, that smugglers have carried infected and prohibited goods into healthy towns ; that a fatal plague has soon after commenced, and that some of those very smugglers have taken the disease, and at the hour of death have confessed their crimes.

Whoever takes the trouble to read the history of the plague, in the several trading cities in which it has appeared ; and observes the evasions that have been practised, and the perjuries that have been committed by masters of vessels, to conceal the cases of men who had died of the plague on board of their ships, lest they should be compelled to perform quarantine, will not be surprised that the origin of the plague, in many instances, should be unknown. The man who wilfully kills another is hanged as he should be ; but the man who fraudulently in-

roduces a disease by which hundreds are destroyed, especially the gibbet. Such is the unequal operation of laws.

I might have mentioned another circumstance in which there is some resemblance between the plague and yellow fever. They are both diseases about which medical men are apt to be mistaken, when they first appear. In the year 1720, when the plague appeared at Marseilles, it was a considerable time before some of the faculty would admit that the prevailing disease, however fatal, should be called the plague. It might be called a common epidemic, or any other fever except the plague. A ship had lately arrived from the Levant, on board of which two Turkish traders had died of the plague, as also five or six of the sailors, and the surgeon. Perhaps it was apprehended that the doctrine of importation might be established, by admitting that the prevailing disease was the plague. True it is, that the ship performed quarantine, but it is not true that all the passengers performed quarantine, nor is it true that the passengers brought no bundles and packages on shore. Nor is it true that the plague appeared in any other part of the city, before it appeared in the very street where those parcels were opened. The name of the disease was fully established before forty thousand of the inhabitants had perished ; the number that was destroyed by that visitation. In the year 1743, a ship arrived at Messina, from a port in which the plague prevailed. The captain and one of his people had died by the plague on the passage. The ship was destroyed and the remainder of the crew performed quarantine. We are not informed whether any goods were secretly saved from the ship, before she was burnt ; but a mortal disease very soon appeared in Messina.

A single physician had the hardihood to declare that it was the plague, but thirty-three physicians formally declared that it was a common epidemic distemper. The magistrates and the populace, for this reason, neglected all precautions. The death of forty-three thousand of the inhabitants was the unhappy consequence. We have seen a late instance in a neighbouring town, if we might compare small things with great, in which the medical tribe would not agree that the disease which then destroyed the inhabitants might be called the yellow fever.

The chief reason, as above stated, for supposing that the yellow fever is like to become an epidemic complaint, is that we live in the latitude of pestilence, or the latitude of the plague. I have given some reasons for supposing that Cairo itself, in Egypt, is not situated in a region that is by nature subjected to the plague, nor is any other city between Cairo and Constantinople. It is believed that the plague is cherished at present in these cities by the obstinacy of the disciples of Mahomet, hence the character of that country. But if it should be admitted, that the whole coast of the Mediterranean, from the Nile to the Hellespont, was by some constitution or law of nature subject to the plague, it would not follow that cities, on the sea-coast, in the United States, within the same degrees of latitude, are subject to the same or any similar disease. I cannot think of any two tracts of country on the face of the earth, between the same parallels of latitude, in which the situation of the inhabitants is more unlike one to the other, than the situation of the inhabitants of the two countries named.

People on the coast of Asia Minor have a continent to the eastward, that in many places, at no great distance, is a sandy desert that produces a fatal sirocco. It is a continent from which the summer winds are more oppressive than a dead calm. Our continent lies to the westward, from which, in the midst of summer, we have refreshing breezes. They have a sea to the westward, we have an ocean in the opposite direction. The inhabitants of China, from Nankin to the head of the Yellow Sea, and the people who live on the eastern coast of Japan, are situated nearly in the same manner that we are, with respect to land and water; but if they are frequently visited by the plague or yellow fever, that circumstance has escaped general notice. For these and other reasons of the same kind, I am induced to hope that the citizens of the United States, who live near the latitude of Constantinople, if their intercourse with hot climates be duly guarded, have little reason to apprehend the frequent returns of a pestilential fever.

The reader will be pleased to observe, that when I say the yellow fever is not to be considered as an indigenous complaint in this city, I speak only of the conclusion that should be drawn from a comparison of latitudes and situations. I say nothing about the matter of fact. I leave it to the medical gentlemen to determine whether the yellow fever be a native of this soil, and a disease that is not infectious; or whether it may not, like the plague, be an infectious disease, and one that may be imported. When I consider the *singular* manner in which those gentlemen reason, I presume it will be long before the question is determined. I deem the reasoning of those gentlemen, or some of them, to be of a *singular* quality, because the

conclusion does not follow the premises in the common logical form, but is drawn in direct contradiction to the premises. This may appear strange at first sight, but the reader shall have the sample of an argument in the common form, and one in the modern medical form : e. g.

The plague is a contagious disease. It has been and may be imported ; therefore quarantines should be established, though at a considerable expense, to prevent the importation of that terrible disease. This is the old form of reasoning ; and people in France and England reasoning in this manner, and acting accordingly, have long been exempted from the visitations of that disease. Here follows a specimen of the modern form of reasoning : viz. The yellow fever is a native disease. It is not contagious ; it is not, and cannot be imported ; therefore a host of officers should be kept up, at a great expense, to prevent it from being imported. In other words, to prevent the thing from being done which cannot be done. Would any man seriously advise that we should build a large fort and support a garrison at Albany, to prevent that city from being battered by ships of the line, when he knew that no such ship could come within fifty miles of the place ? If such a man expected the command his advice would be the more easily accounted for. But if he should get the command of such a garrison, he would hardly lose much of his sleep by watching.

Besides the circumstance mentioned, of medical men drawing their conclusions somewhat different from the common form, we have another reason for presuming that the question of the yellow fever being importable or not

importable, may be the subject of long debate. Gentlemen who say that the disease is not contagious, and cannot be imported, allege that it is generated among us like common bilious fevers, and from a similar source. Hence it follows, that if the fever breaks out, as it constantly does, in the neighbourhood of a ship that is just arrived from an infected port, or in the place where that ship is landing her cargo, or in the place where some of her passengers are lodged, we are not to infer that the disease has been imported in that ship, for it is not importable. We have only to search for some puddle or heap of manure that lies in sight of the ship, which is to be taken for the legitimate cause of the disease. Now, since there can be no difficulty in finding such objects or causes in every port, it will readily be perceived that the dispute may be perpetual.

AN OBSERVER.

V.

CASE of ENTERITIS, *accompanied with a PRETER-NATURAL FORMATION of the Ileum. Communicated to the EDITORS of the American Medical and Philosophical Register, by JOHN W. FRANCIS, of New-York.*

THE writer of the following paper was an eye-witness to most of the facts which he relates. They are taken from memoranda made at the request of his preceptor, Dr. David Hosack, in whose practice the case occurred. Should the Editors of the Register consider it deserving a place in their journal, they are at liberty to insert it.

On the morning of December the 22d, 1809, Dr. Hosack was requested to visit a Captain D——, aged about thirty-five, of a slender habit of body; who was represented to be in an alarming condition. At the first view of the patient it was perceived that he was afflicted with all the symptoms characteristic of enteritis, accompanied with those of ileus; viz. an acute and constant pain in the whole abdominal region, particularly about the umbilicus: the abdomen greatly distended, hard, and extremely sensible to the slightest touch, or whenever he attempted to move: vomiting of stercoraceous matter, and constipated state of the bowels: pulses small, tense, and frequent; respiration hurried and anxious; countenance livid; heat of the body increased somewhat beyond its natural temperature; and excessive thirst. These symptoms were attended with a great prostration of strength, and an extreme degree of restlessness.

Upon inquiring into the history of his complaint, it appeared that he had been first attacked while at the theatre, on Wednesday evening, the 20th. On the morning of the day following he was visited by an eminent physician, who directed an antispasmodic mixture, the symptoms of his disease being, at that time, but slight. Deriving no relief from the medicine prescribed, Dr. Hosack was called upon on Friday morning, the 22d, between the hours of eight and nine, when he found him labouring under all the symptoms above described.

From the best information that could be obtained, it was rendered highly probable, that the exciting cause of his complaint was *cold*. He had repeatedly been subjected to attacks of this kind, though less violent than the

DOMESTIC INTELLIGENCE.

THE EPIDEMIC NOW PREVAILING IN THE STATE OF NEW-YORK.

THROUGH the liberal exertions of our friends we are enabled to present our readers the valuable communications which follow, on the epidemic now prevailing in this state. The interesting nature of the disease itself, the great anxiety which it has created, and the alarm which is already produced in this city by the appearance of some few cases of it, have induced us to occupy more of our pages with the discussion of the subject than we otherwise would have done. From an attentive perusal of these communications, as well as of those in the preceding part of the Register, we are persuaded that the disease is not of that fatal nature which many have represented, and that the mortality which has attended it, has been caused, in most instances, by the empirical and unjustifiable practice that has been adopted. The letters of Dr. M^rReynolds and of Dr. Hudson deserve to be particularly attended to, from the important accounts which they have given of the morbid appearance upon examination after death.

An Account of the Epidemic as it lately prevailed at Black Rock, near Buffalo, in 1812, in a Letter from J. D. M^rReynolds, Surgeon of the Army, to Dr. S. Marshall, Surgeon at the Navy Hospital, New-York. Communicated to Dr. Hosack by Dr. Marshall.

Black-Rock, Niagara River, Jan. 20th, 1813.

Sir,

HAVING seen, in a late New-York paper, a statement relative to the extent, fatality, and treatment of the prevailing

epidemic in this neighbourhood, I am induced to believe, from the treatment therein mentioned, that you have not seen a correct history of the disease. Under that impression, I transmit the following account, believing you are interested in the nature of a malady that has produced greater mortality on this station, than the sword of the enemy at every other, since the declaration of war. From the 15th Oct. to the 26th Nov. (the date of its commencement,) there was one continued rain, with few exceptions; the wind s. w. during which time the soldiers and seamen were equally exposed in open tents. At the date last mentioned, the wind was w. n. w.; nights cold. The symptoms of the disease, were a slight chill, violent pain in various parts of the thorax, generally on the right side; laborious respiration, great thirst, great loss of strength, and unwillingness to motion; a depressed irregular pulse, that became full and open after blood-letting, though sometimes the disorder required the second, third, and often the fourth bleeding before this effect was produced. There was but little cough in the first days of the disease, but abundant evidence of a continual irritation in the bronchia and trachea. Death sometimes succeeded within forty-eight hours from the first attack, though most generally not until the third or fifth day; prior to which, all the symptoms became more violent, and the patient died of suffocation. Some patients, a few hours preceding death, had all the symptoms of phrenitis. I supposed it a pneumonic inflammation, and prescribed for my first patient, blood-letting, epispastics, cathartics, and sudorifics; he, however, died on the third day.

I examined his body, and in a few days, five other bodies; opportunities occurring almost every hour, from the number of troops stationed at this place. The appearances after death were a high state of inflammation in one, and sometimes each of the lungs, a large quantity of extravasated serum; and a

morbid adhesion of the lungs to the pleura. In fact, there was no part of the thoracic viscera exempt; in some the pericardium, in others, the mediastinum, or diaphragm appeared to have been most inflamed. I observed in no case, a diseased state of the liver: except in the superior part, a slight degree of inflammation, from its contiguity to the diaphragm, when that membrane had been much affected. I mention this particularly, from the circumstance of some surgeons of the army having examined a body that exhibited some marks of a diseased liver. There can be little doubt but that in this instance, the subject must have been affected with some hepatic disease before taken with pneumonia. The great want of success that had attended the limited use of the lancet, induced the physicians to change their plan of treatment to stimulants and cordials. To this all the practitioners of the neighbourhood and army subscribed, (Dr. Young, of the 14th regiment, excepted,) which gave rise to the note I observed in the New-York paper. From this statement you will pronounce the disease, the pneumonic inflammation of Dr. Cullen; as such I have treated it, although I am pained with the recollection of losing nine patients under its influence. I am well assured, under different circumstances, the number would have been much less. The hospital being open and cold, my having to attend fifteen or twenty wounded, many of whom were officers; there being no marine guard to keep convalescents within the limits of the hospital, which is a half mile distant from the navy yard, prevented my seeing patients for twelve, and often twenty-four hours after the commencement of the disease; and you well know it is a prominent feature in a sailor's character to keep off the sick report as long as possible. Through this loss of time in the commencement I attributed the major part of the deaths; the violence of the inflammation being such as to destroy the vitality of the part.

Observations on the treatment. I ascertained that active cathartics were not advantageous in the cure, on account of their weakening the powers of life without abstracting the excitement. I preferred sulphate of soda, senna and manna. Sudorifics have been of but little service, either from the state of the apartments in which the sick were confined, or the nature of the disease. Blisters, after copious venesection, gave ease in translating the excitement. I gave, during the first three days, a powder of calomel and ipecacuanha, three grains each, every three hours. I employed the *serp. virgin. rad.* and dressed the blisters with *ung. mer. fort.* In all cases where a slight ptyalism was produced, the patient became evidently better. Great advantage was derived from the inhalation of steam, and from the warm bath, *but all medicines were useless if not preceded by an early and bold use of the lancet.* I have had more than seventy patients of the disease, and have twelve at present, and am myself convalescent. I am informed that the citizens suffer much from the influence of a disease that has become doubly mortal from the injudicious and imprudent publications that have recently appeared.

I am, with respect, Sir, yours,

JOHN D. M'REYNOLDS.

DR. S. MARSHALL.

N. B. Our seamen had been removed on board several small vessels, some time before the commencement of the epidemic.

III.

*An Account of the Origin and Nature of the YELLOW FEVER, as it prevailed in the town of St. Mary's, Georgia, in the Autumn of 1808. In a Letter from JAMES SEAGROVE, Esq. Chairman of the Board of Health, to DAVID HOSACK, M. D. &c.**

Town of St. Mary's, in Georgia, July 20th, 1809.

Dear Sir,

YOUR letter of the 23d of November last, did not reach me until within a month; how to account for its being so long on the way I am at a loss. I received one from our friend Judge Pendleton, that has been the same time delayed.

* In offering to the public the very interesting letter of Mr. Seagrove, on the yellow fever of St. Mary's, the editors cannot refrain from accompanying it with one or two remarks. From a perusal of this letter the reader will perceive that the author was an eye witness to what he relates, and that from the facts which have come to his own knowledge, he is induced to pronounce the disease which he describes, as peculiar in its character, and of a *contagious* nature. An account of the same disease, and by the same writer, purporting to be a letter to Dr. Nicholas Bayard, was inserted in the Medical Repository, Hex. III. d. vol. 1st. p. 135. In this communication, however, not the least notice is taken of the contagious character of the disease, and every thing relative to the specific form of the disorder omitted. That the article published in the Medical Repository, was originally in substance the same as that now printed in the Register, we have the fullest assurance from the testimony of the author himself in a communication to one of the editors of this Journal. We must consequently account for the imperfect statement given by the editors of the Repository, to a wilful suppression of some of the most material parts of the letter. How far, we ask, does such conduct become the character of those who profess to be actuated by a sincere desire for truth, and that too on a subject vitally interesting to every member of the community? What value, too, it may be asked, is to be attached to the various accounts which have been published in that work, of the yellow fever as it has prevailed in different parts of our country? We can scarcely withhold the expression of our indignation at this uncandid and disingenuous conduct! But we leave the reader to his own reflections. ED.

This will account to you, for what you might have conceived a want of attention to your application. I have been much from home since I received your favour, or should have wrote ere this, giving you such information respecting the sickness that prevailed in this town last fall, as was in my power: but as I am unacquainted with medical matters, as well as the technical terms, I fear my relation of it will be but ill understood; however, I hope there will be allowance made on that score, whilst I state absolute facts.

During the spring and summer of 1803, the town of St. Mary's was, (as usual,) remarkably healthy. During the latter part of August, and part of September, there were continued heavy rains, which filled all the low and level grounds, and water lay on the surface of the earth for some time, rotting the grass, weeds, and vegetables; the water in the wells became bad and offensive to the smell: yet no change in the health of the inhabitants was observed until about the 5th of September, when one of our coasting packets between this and Savannah, called the Polly, commanded by one Fowler, arrived with two sailors sick on board, and owing to the ignorance and neglect of the health officer, Dr. Ross, and the city council, these sick men were allowed to be landed, and lodged in a family in the centre of the town. One of these men died a few hours after landing; the other lingered some little time, and also died, both of them with the same kind of disorder that afterwards proved so fatal to the inhabitants. Two persons who attended these sick, viz. James Lindsay, and a free mulatto named Sip, both died: Lindsay on the 9th September, and on the 10th the mulatto. The whole family in the lodging were taken with the same fever, and most of them died. The vessel that brought the sick seamen had been employed during the spring and summer, in transporting corn and different kinds of provisions, and was in an exceedingly foul state, so much so, that there was no remaining

on board from the smell of rotton corn, &c. The consequence was that two more of her crew died on board afterwards at Cumberland Island. The disorder spread rapidly after the death of Lindsay and Sip, and having traced its progress from its first appearance, I have no hesitation in believing and saying, that the fire was lighted by the landing of the two sailors from the before-mentioned vessel. The heavy rains, the flat situation of the place, the filthy state of the town generally, and a quantity of rotten provisions stored by a set of unprincipled speculators and strangers, for the purpose of smuggling to Florida, contributed not a little to the ready receiving and promoting the contagion; these are my candid sentiments of the commencement of the sickness.

I shall now state to you the symptoms and progress of the disorder, as far as my observation went. The unfortunate person was generally taken with a pain over the eyes, the back of the head, a pain in the back, a chill as if an ague fit was coming on; thence great oppression in the breast, with a smart fever, but the pulse not very high. The patient soon became delirious, which generally took place from five to eight hours from the first symptoms; a great difficulty in keeping the body open, or getting a passage. It appeared in several cases, that the passage from the upper to the lower part of the body was nearly closed; so that medicine had but little or no effect in clearing the bowels, or opening a passage. I knew a gentleman (in my house) to have taken upwards of one hundred grains of good calomel, and the usual quantity of jalap, frequent injections, and the warm bath, without effect, until a large blister on the pit of the stomach, and frequent rubbing with hot brandy and laudanum gave relief. You will observe by the list of cases now sent you, that several died in twenty-four or forty-eight hours from the first symptoms of the fever, and from being hearty and well. In

almost every case of death the black vomit, or bleeding at the nose and mouth, took place before the patient's decease.

The mode of treating the disorder by Dr. Turner, with whom I was intimate, and with whom I visited the sick several times every day and night, was pretty much as follows : The doctor generally recommended to the inhabitants whilst well, and afterwards, to avoid animal food as much as possible ; to live low, and to avoid ardent spirits ; to drink freely of lemonade as their common drink. When seized with the disorder, he generally prescribed calomel and jalap, and sometimes glauber salts, with a little tart. emet. always using every endeavour to keep the body open and cleanse the bowels. He used the warm bath, clysters and blisters ; and rubbing with warm brandy and laudanum the pit of the stomach had, in several cases, a good effect. Doctor Turner was bred in Rhode-Island, and a regular, though young physician ; he was the only valuable character we had in that line. But unfortunately he, like many gentlemen of your profession, would not allow (for a long while) that the disease was contagious ; but poor young man, he changed his opinion before he fell himself a victim.

A monstrous quack, (our health officer,) and a Dr. Hitchcock from Connecticut, made free use of mercury, external and internal, so as to salivate all their patients. How successful they were in their practice my list will explain. Bleeding was not used to my knowledge, except that Dr. Turner bled himself when first taken ; he was of a full habit and in great health. A Dr. Stowel, (who arrived near the close of the sickness,) bled a young gentleman named Hammel ; both these that were bled died. Not a single instance is there of the disorder communicating out of the town, even within a mile ; but it is a melancholy fact, that not a single person who caught the infection in town, and went to the country, but what died.

Thus I have detailed to you what I conceived most material and essential to your inquiries. I shall now give you some detached observations which may still further serve to elucidate the nature of this melancholy disorder.

As soon as the breath was out of the sick, the body assumed a yellow, then a purple, and after, a black colour; and in a few minutes was in a state of putrefaction. The sick (generally) recovered their senses before death, the pain and fever ceased, as I suppose, when a mortification took place. The Africans and native blacks were as subject to the disease as the whites, but it was not so fatal to them. As an instance of this I will mention how subject they were. I had no less than seven persons in my family taken with the fever, and only myself able to attend them; all the whites and my family servants being down, I sent to my plantation, thirty miles from town, and had two men and two women brought to assist, and in twenty-four hours after arrival, three of them became affected with the same fever; all of them recovered though they had it severely. I here beg leave to mention an experiment I made, and I, verily believe, with success. I had been in the habit, for some years past, of using the *eau de luce*, prepared by a French apothecary in Savannah, in the cure of the bite of the rattle snake, and in so doing have unquestionably saved the lives of five persons, when all other medical aid had failed. Seeing the cases desperate, and fearing that our doctors were not masters of the disorder, I thought I would try the *eau de luce* on some of my people; but I first consulted Dr. Turner, who said it could do no harm. I accordingly administered it to eight or ten negroes and a white girl, giving them from fifty to sixty drops in a wine glass of water every half hour, and continued it from eight to twelve hours, and all of them recovered. I am of opinion that this medicine, given in the early stage of the yellow fever, would have a good effect. I was absent

from the 1st to the 26th of September, and knew nothing of the sickness until I landed in town with my family ; I could not then reconcile my feelings to retreat and leave so distressing a scene. The town is governed by an intendant and council, possessing ample powers, but they most shamefully neglected and abandoned their duty, without taking a single step toward relieving the sick, or stopping the spread of the contagion. Finding this the case, as the senior justice of the council, I called a meeting of the inhabitants on the 28th September, who appointed five of the citizens as a committee of health, who immediately commenced their duty ; and on the morning of the 29th, reported thirty white persons and twenty-four blacks very sick with the prevailing fever. This number will appear small in such a population as New-York ; until I state to you, that from a census taken a year before, the number of white persons was three hundred and fifty, of blacks one hundred and fifty, and that several of that number were absent when the sickness began. The first step of the committee was to provide a hospital, nurses, medicine, and nourishment for the indigent sick ; next, to remove all that were well out of the way of the disease, as they soon discovered it could not be stopped as long as there were subjects to work on, or until cold weather came. By the 5th of October there did not remain more than one hundred white persons in town sick and well ; of that number eighty-seven took the fever, so that at one time we could not muster more than ten well white men in town exclusive of some Frenchmen. And now I mention French people, I think it well to remark, that there were in town, during the whole time of the sickness, about twenty of these people, and that, not a single one of them had the fever, though the men exposed themselves by visiting and nourishing the sick. I attribute this, in a great measure, to their mode of living, and being formerly inhabitants of the French islands. They

used no animal food, lived chiefly on vegetables, drank lemonade in great quantities, made as follows: take the sour orange or lemon, peel it quite clean, cut in quarters, take out all the seeds, then put them into a vessel, put as much sugar as will make it pleasant, pour boiling water thereon and let the vessel be well covered, and stand in that condition until cold; thus prepared it is pleasant drink for the sick. The French people disapproved of mercury in any way. They saved a young lady, (after she had the black vomit,) by wrapping her up in sheets wet in warm vinegar, putting her to bed, covered over with blankets.

That you may judge of our climate, I send you extracts from my diary of the weather for two seasons during our hottest months; the cause of its not being continued during the time of the fever, was owing to the confusion we were all in, and my nephew, who attended to the thermometer, was taken with the fever and died; he had just copied the last inclosed before he was taken down. I think well to mention, that during the sickness the weather was dry, and not by any means unpleasantly hot.

The committee of health kept coffins ready made, graves dug, and buried the dead without delay; had all bedding and clothing, used by the sick, burnt: after the fever subsided, had the town cleansed as well as possible; the wells and pumps attended to; the old privies filled up and new ones made. I am persuaded, that with proper attention to cleanliness and our quarantine laws, we shall escape, at all times, the yellow fever. Our climate is nearly salubrious, (I mean St. Mary's,) we are open to the sea, are surrounded with salt water, and have the sea breeze or trade winds, with which we are visited almost every day in summer. As a proof of the health of St. Mary's, I have to mention, that I have lived here for twenty years, and have scarcely been a day sick, though I have undergone great fatigue and exposure. At the

present day I do not know of a single person of my acquaintance in town or in the country, for twenty miles around, that is sick or complaining.

I think that by the time you have read thus far of my unconnected scrawl, you will be tired. I shall therefore close it by referring you for further information, to the different enclosures; and by requesting, as a particular favour, that you will indulge me with your opinion of the sickness alluded to, and should you publish a book on fevers, which I understand you intend, you will confer a favour on me, and render a service to the inhabitants of this remote country.

With sentiments of respect, I remain

Your humble servant,

JAS. SEAGROVE.

DR. HOSACK.

IV.

OBSERVATIONS ON MERCURY: embracing its Medical History and its abuse as an article of the Materia Medica. By JOHN W. FRANCIS, M. D. Fellow of the College of Physicians and Surgeons of New-York, Member of the New-York Historical Society, &c.

THE general properties of mercury, as found in a native state, and its various combinations with other substances, being generally detailed at some length in the several works on chemistry and mineralogy, all that the writer intends, on the present occasion, is, to offer a concise view of its medical history, and to consider the abuse of this powerful remedy as an article of the *materia medica*.

From the sacred volume may be derived considerable information, relative to the state of chemical knowledge, in the earliest ages of society. Numerous passages there

ARTICLE II.

*An INQUIRY into the Cause of the Prevalence of the YELLOW FEVER in New-York.**By VALENTINE SEAMAN, M. D.*

THE following inquiry into the history of the epidemic Yellow Fever that has appeared in this city, at different times since the year 1791, was instituted for the purpose of ascertaining its most probable and essential causes. If I have succeeded, my end is answered, and my trouble fully compensated; if not, I still gratify myself with the thoughts of having established, with a considerable degree of accuracy, facts, that may be useful to some more fortunate inquirer.

The great difficulty of coming at the simple truth, even near at home, has made me cautiously avoid attending to hearsay stories of what has happened abroad; obscured by their distance, often warped by their relators, and too generally eagerly caught at by their favourers, and equally neglected by the adverse party. An instance of the impropriety of giving a currency to such fly-about tales, is glaringly exhibited in William Currie's letters to Benjamin Wynkoop: this *penetrating* man having convinced himself, notwithstanding a bulwark of opposing evidence, (Webster's papers on Bilious Fevers, and Bayley's Account of the Epidemic of 1795,) impassable by any body else, that the Yellow Fever that desolated our city in 1795, was introduced into it by the brig Zephyr. One naturally would conclude from Dr. Currie's account, that he had confined his inquiries merely to the superficial scum of newspaper observations, and flying reports; but his subsequent reflections prove him to have been acquainted with what ought to have corrected his premature and ungrounded conclusions. But these circumstances, so discordant to his wishes, it seems he has thought proper not to attend to, but rather to rest his opinions upon the slender support of his *ipse dixit* authority; while he soothes his feelings, by flying from the narrow path of reason and truth, into the unbounded field of hard-strained invective and feeble scurrility.

I cannot, in this place, forbear noticing the different effects that opposite opinions have had on the subsequent fate of Philadelphia and New-York. While the physicians of the former place,* I will

* I do not hereby mean to include all their physicians, but only the majority of them, as several worthy characters among them have risked their very reputation at the shrine of public welfare, in attempting to call the attention of that afflicted city to its true interests.

not say, "*actuated by some malignant motive*,"* as I can hardly conceive human nature capable of such depravity, have been flattering the pride and vanity of their fellow citizens, with a notion, that their city was all-perfect, and its situation, in regard to healthiness, beyond amendment; and that to keep up a sharp look-out to their neighbours was all that was necessary; they have induced them to disregard that attention to cleanliness, which the terror of their first attack had driven them into; and hence have those who unhappily confided in their judgments, returned to their former neglect of domestic causes, which has again involved them in a calamity, as general, and, perhaps, as fatal, in proportion to the *remaining predisposed inhabitants*,† as that of 1793. In the meantime, the *learned* physicians, as they have, in a sneering way, been called, of New-York, have had honesty and independence enough to speak their minds freely, and to let their fellow citizens know, that "without the air of putrid effluvia, they need have no apprehension of a Yellow Fever *spreading* among them;" and their silly hearers, from being so weak as to put confidence in their opinions, have removed most of the suggested causes of pestilence; and hence have confined the effects of the disease, this year, to the narrow limits of a few filthy spots; and the number of deaths to within thirty: notwithstanding the severity of attack, and malignancy of the complaint, where it prevailed, were fully equal to that of 1795.

I shall not impose upon the time of the reader, with quotations from different authorities, in various parts of the world, in proof of the particular prevalence of Yellow Fever in places especially favouring the accumulation and fermentation of putrescible materials of some sort or other; these facts being too well known to need recapitulation: but shall endeavour to trace the history and progress of the disease, for the purpose, if possible, of ascertaining its true cause, as it has occurred to my observation, in this city for several years past.

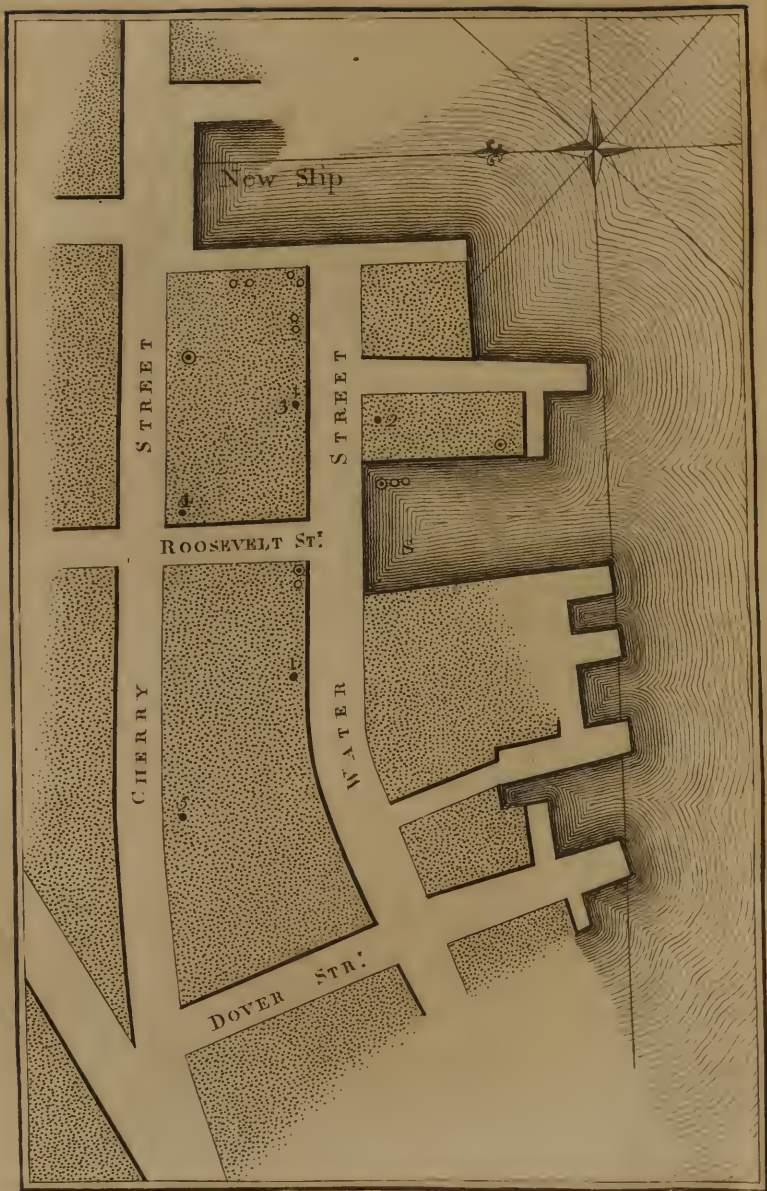
In the autumn of 1791, the Yellow Fever was considerably prevalent in a part of Water-street, in the neighbourhood of Peck's-slip, noted, at that time, for having the docks near to it loaded with every kind of filth that could be scraped up out of the adjoining slips, which had been long collecting every species of corruptible materials that the citizens wished to get rid of. (See also Jonas Addoms' Inaug. Dissert.)

In 1792, at the season wherein those complaints mostly prevail, a long indisposition confined me to the house, and prevented

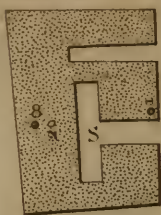
* Currie's charge upon those who dare to think differently from him.

† By the *remaining predisposed inhabitants*, I mean to include only such of those that continued in town, who had not undergone the complaint before, as a former generally screens us from a future attack, at least a fatal one.

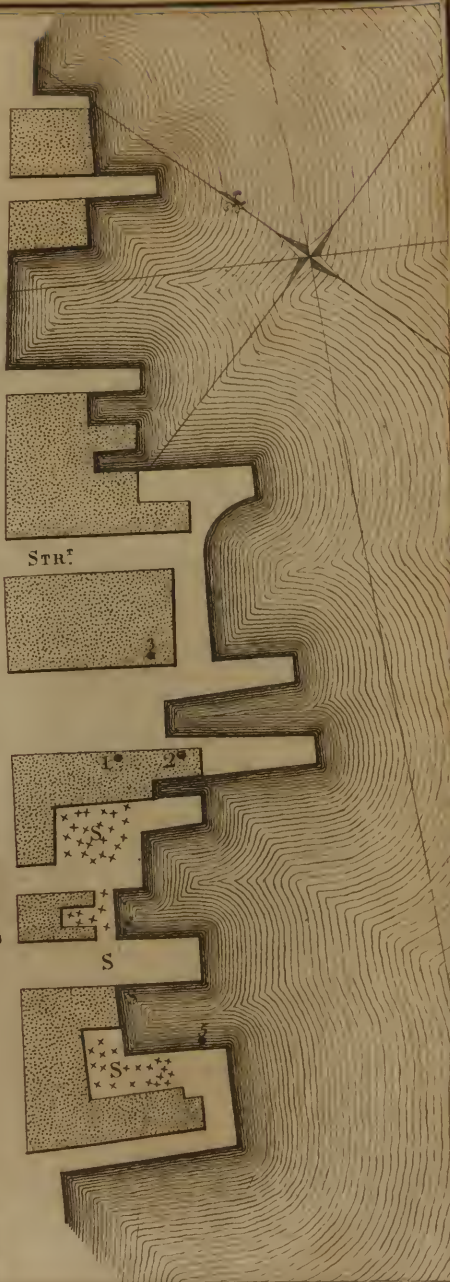




BECKMAN SLIP



BURLING SLIP



FLETCHER

STR.

STR.

STR.

FLY MARKET

WATER

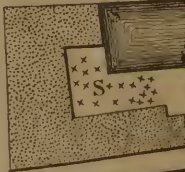
DEPEYSTER STR.

FRONT

PINE STR.

S

WALL STR.



my knowing much about what was going on out of doors, or of the state of the city, either as favouring health, or threatening disease. However, I did not understand that there was much alarm of Yellow Fever that year. Probably there was little or none.

Nor, in 1793, was the alarm of Yellow Fever heard of among us, excepting from a few solitary cases imported from Philadelphia, and which was lost in the fate of the unfortunate individuals who had brought it from its source, without the least injury to the healths of our citizens, either in the capacity of friends, nurses, physicians, or neighbours; none of these patients, as far as I could learn, having been permitted to seat themselves in places abounding with putrefying substances.

The complaint in the year 1794, appeared to such a degree, as to occasion considerable uneasiness in the minds of many of the citizens. *The Committee for preventing the introduction of contagious diseases*, met regularly to establish measures for the welfare of the city. To them, in a communication made the 11th of 9th month (September), among other circumstances, I intimated as a reason for believing that it was supported by causes within ourselves, "That most of the patients that had been, or then were, affected with dangerous fevers, were either such as resided in the neighbourhood of the slips, (which then were or lately had been cleaning out) or whose employment led them to frequent those places; as cartmen, measurers, labourers, &c. at least such was the situation of the cases that I had heard or known of, and respecting which I had taken some pains to inform myself. I then had, at that early part of the season, attended four patients; and they were all of that description. Two of them were boatmen, who lay at the New-slip; another lived not far from it; and the business of the fourth obliged him to frequent the slips." It was observed, that during the very time that these persons were taken sick, the MUD-TURTLE (as the machine was called, the temporary suspension of whose operations was the object of that communication) was performing its pestiferous purgations on this filthy slip.

In 1795, that part of the town that bore the chief burthen of our calamity, was remarkably distinguished by peculiarity of circumstances and situation (aided by the singular regularity of our rains), seemingly well calculated for the accumulation and decomposition of all kinds of perishable animal and vegetable substances. (Webster's Collection of Papers on Bilious Fevers.)

The chief prevalence of the disease in 1796, seemed evidently fixed where, from our former experience, we ought reasonably to have expected it. For no doubt, at that time, the neighbourhood of the Whitehall, from the nature of materials wherewith a large dock was there filling up, aided by the noisome exhalations,

from the exposed bottom of the Exchange-slip at low water, must certainly have been rendered the most noxious part of the city. (Bayley's Letters, Medical Repository, No. I. Appendix.)

But it was not intirely confined to that particular neighbourhood in 1796. Four deaths from the Yellow Fever occurred, during that season, within fifty yards of where Roosevelt-street drain empties itself into an inlet which was then open quite up to the southerly side of Water-street; the bottom of which (S on plate I.) was frequently in part left bare even at high water. Every ebb-tide exposed at least eight hundred square yards of its surface, covered with the numerous perishable materials, furnished by the different streets of that crouded part of the town, which descend into this common sewer, in addition to the other putrid matters that such handy places are always collecting.

One of them, James Callender (marked .1 on plate I.) was an Irishman, who had resided about five months in this city, and was the first that I could hear of who had the disease in that neighbourhood. He died on the 22d of 7th month (July,) after a few days illness, with a yellow skin, and smelled extremely offensive, as I was told by those who assisted in burying him. Two others, of the above cases, came under my own particular observation, and were decidedly of that complaint. Both of these patients were foreigners just arrived from London. One of them (.2) I attended. He had been in town but five days when he was taken sick: On the fifth day afterwards, 19th of 8th month (August), he died, with coffee-ground vomitings and yellow skin. To the second (.3) I was called a few hours before his death, to determine whether he was a proper object for the New-York Hospital. He had been more or less indisposed, from the second day after his arrival, which was on the 2d of 10th month (October), but was not seriously taken till the fifth. He died on the seventh day of his disease, very yellow, but I know not what was the nature of the matter he puked up. I was told he had been much distressed by his sickness of stomach. The last (.4) of these four patients died the 20th of 9th month (September), after five days illness, with yellow skin and dark vomiting.

Another person also died with this complaint, some little distance off, in Cherry-street (.5). I saw him in the latter stage of his complaint, in conjunction with the physician who had attended him from the beginning; and we were perfectly agreed as to the nature of his disease. He died the 21st of 8th month (August), on the seventh day of his complaint, with yellow skin.

Besides these fatal cases, there were a number of persons also, that were seriously affected by severe fevers, but yet recovered, (designated ☉ in the plate.) I attended three of this description; one of them lived in a house built upon piles, over a part of the

above-mentioned flat; another passed a great proportion of his time, during the day, in a store adjoining it; and the last lived in Cherry-street, and the yard of his house backed upon Water-street, about eight rods distant from the same spot. Dr. Borrowe informed me, that he had also attended one, at the corner of Water and Roosevelt streets, with the complaint well marked, and from which he, with difficulty, recovered.

There were several other cases of fever, of a suspicious nature, though slight and soon recovered from. Their situations are marked (o) on the plate.

It may not be amiss here to observe, that none, as far as I could learn, that had the fever in 1795, suffered with it in this neighbourhood this year, excepting one of the slight cases above-mentioned: Its general prevalence the year before was, perhaps, the reason why no more were affected about this spot this year; their former indispositions probably securing them against a second attack. This much is certain, that the nine patients first above-mentioned, had not had it in 1795. Indeed, seven of them might be said not to have been exposed to its cause; one having lived only a few months in town, two having just come from England, one absented herself from town in the sickly season, two had lately come from the country, and one that year lived at the Whitehall; and one of the others continued in town for only a part of the time during the epidemic of 1795.

Why the disease did not become as general about the easterly low part of the city in 1796, as in the year before, probably was owing to the removal of most of the causes that were supposed to have promoted such complaints; and perhaps also, in a degree, to not having such regular rains, to favour the deadly operations of remaining deficiencies. (See Webster's Collection of Papers.) Many of the lots in that part of the town had been filled up; the filth and dirt of the streets and yards had been more carefully cleared away; the unpaved streets, in general, had been paved and regulated, so as to prevent any water from standing in them; and several of the slips and vacancies under the stores set upon piles, had been filled up with wholesome earth. But, in this devoted spot, partial neglect, we see, was followed up by its predicted, I had like to have said merited, consequences.

It remains to notice the disease as it has shewn itself among us this season. The cases that have occurred being too numerous to attempt to get an accurate history of them all, and the want of proper marks to identify it where it is slight, if attempted, would, at best, leave but a very objectionable result: I have therefore only noted the fatal ones; nor do I think we need much to regret the omission of the others, since, from the number of deaths, we can nearly calculate upon its degree of prevalence, and particularly

since the proximity of cause will, most probably, correspond with its mortality.

To proceed. 1st. William Cummings, two days after having taken his lodgings in East George-street, was attacked on the 1st of 9th month (September), with chills, head-ach, and the other common symptoms of fever, which increased in the night with delirium, &c. The next day many circumstances giving occasion to suspect his complaints to be of a dangerous nature, he was carried to the Lazaretto, on Bedlow's island, where, in a few days, I have understood, he died.

2d. Margaret Wiggins, in the same street, was taken on the 14th of the same month. On the fifth day of her disease, according to the account of the person with whom she lived, she puked a black, offensive, ropy matter. Two days afterwards, on the morning of the 22d, she died very yellow, and with black effusions about her¹ east.

3d. — Brown was taken the next day, the 15th, and died also on the morning of the 22d. He had vomited, during his disease, much blackish bloody matter, and was very yellow.

4th. — Price, after having passed a part of the evening of the 16th of 9th month (September), in East George-street, was taken in his return home at midnight, with dizziness and lassitude, succeeded by a chill, followed by a hot fever, &c. He died on the 19th, very yellow; he had, during his disease, puked a black matter.

5th. William Templeton sickened on the 16th, with chills, &c. and died in the afternoon of the 22d, very yellow.

6th. John Busson was taken on the same day with Templeton. During his disease he puked much: the nature of the discharge I could not learn. He died on the 23d, with yellow skin, and blackness about his neck and breast.

7th. A lad, by the name of Parcells, died in Cedar-street. His mother lived in Henry-street, two doors from the corner of East George-street, where he used frequently to pass his evenings, and sometimes to stay the whole night. He became sick on the 19th, of the complaint of which he died on the 23d. According to the account of his physician, his must have been a decided case of Yellow Fever. He had the black vomiting and yellow skin.

8th. Seth Fairchild was taken on the 27th of 9th month (September), and died on the 2d of 10th month (October), with black vomiting and yellow skin.

9th. George Ross was taken sick the 11th of 10th month (October), and died on the 20th. He had puked a blackish matter. His skin was yellow.

10th. — Hulshart was taken on the 12th, and died on the 17th of 10th month (October). He was yellow, and had puked, during his illness, a greenish brown matter, and purged clear blood.

All the above cases appear to have originated in East George-street; and all, excepting Price and Parcells, resided within the small compass of seventeen houses, in the lower part of the street.

11th. On the 13th of 9th month (September), John Holmes, after having been a little complaining for a week, according to the relation of his landlady, was taken with a chill, succeeded by a hot fever, violent head-ach, red eyes, &c. On the 19th he was sent to the New-York Hospital, where he died on the 23d, with a yellow skin, after having puked up a dark brown feculent looking matter. He had taken lodgings in Chesnut-street three days previous to his indisposition.

12th. — Havens, who lay on board a vessel at Lynch and Stoughton's wharf, from the time of her arrival, the 25th of 8th month (August), was taken unwell the 14th of 9th month (September), more unwell the next day, still more the day after, but not to such a degree but that he walked up to Roosevelt-street, where he took lodgings. He was confined the next day; on the 18th he was very yellow, and vomited, in great quantities, a black matter, mixed with coagulated blood, almost incessantly. He discharged the same by stool, and died in the night of the 19th.

13th. On the 17th, Samuel Suydam, who resided near the Exchange, in Water-street, but who passed the greatest part of his time, during the day, in his store, a little to the east of Lynch and Stoughton's wharf, in Front-street, was taken down with his complaint, which terminated fatally, on the morning of the 23d. His physician informs me, that his disease appeared to him to be a Yellow Fever of the most malignant type. He had the black vomiting to a great degree, and his skin was very yellow.

14th. — Kelly (.1 of plate II.) was taken on the 7th of 9th month (Sept.), with fever, attended with a particular determination to his head, not skin, and great derangement of his mind. His complaints being suspected of a malignant nature, he was conveyed to the Lazaretto on the 13th; where, a few days afterwards, he died.

15th. Daniel Wiggins, who lived in the lower house on the west side of the Fly-market, (.2) his physician tells me, was, on the 20th of 9th month (September), attacked with a fever, which assumed a most malignant appearance, attended with black vomitings and a yellow skin. He died on the 28th.

16th. John Van Deventer, (.3) as the family informs me, was taken on the 20th of 9th month (September), and died on the 29th, with a yellow skin.

17th. Samuel Hitchcock, at the corner of the Market and Front-street, (.4) sickened on the 23d, and died on the 29th, in Fletcher-street, where he had been conveyed after he became unwell. His attendant, in her simple narrative of his case, says, he puked matter just like the grounds of coffee, but he was not yellow.

18th. James Hamilton belonged to the schooner Ellice, which arrived on the 16th of 9th month (September), after eight days passage from Richmond, in Virginia. He was employed in assisting to unload her, at the easterly side of Murray's wharf (.5). He was taken sick on the 27th, and then took lodgings at the Crane wharf; where he died in the morning of the 30th, with pukings of a greenish matter, and with a yellow skin.

19th. T. Comstock resided in Front-street, between the Market and Depeyster-street (.6): he was taken on the 28th of 9th month (Sept.), and was afterwards carried to the New-York Hospital; where he died on the 3d of the next month, with a yellow skin.

20th. J. Rogers (.7) was taken in the night of the 20th of 9th month (September), with chills and sickness at stomach, followed by a hot fit, which was succeeded by a sweating. In the morning he was so well as to be about house. His complaints returned towards evening, without a preceding chilliness, and continued, with little or no abatement, till his death. He did not have much sickness at stomach, nor great pain in his head. The tunicae conjunctivæ of his eyes appeared bloated, with a reddish yellow fluid: his skin was yellow; his pulse most of the time soft, and not frequent; and he was much harrassed with a very painful hickuping, with short intermissions, for about twelve hours before his death; which occurred on the morning of the 26th.

21st. Abel Beers attended a store in Water-street (.8). He was taken with chills, pains in his head, &c. on the 10th of 10th month (October), and died on the 16th. During his fever, which regularly remitted every morning, he was much deranged in his mind; his bowels were constipated, and stools, procured by art, dark; his eyes and skin became yellowish on the fourth day; he puked a brownish matter several times on each of the two last days of his illness, and vomited a great quantity of blood just before his death. After death, the skin was observed to be universally yellow, except that there were purple effusions about the neck, breast, and on the lower extremities.

22d. Elias Mowatt, in William-street, died on the same day, of a fever with which he was attacked on the 12th. During his complaint, he had, several times, puked a black matter: he had some yellowness about his neck.

From the foregoing list, which comprehends all the deaths from this fever, which have occurred in this city this year,* up to the present date, as far as I can learn, it appears that nearly one half

* Since writing the above, one other death, and only one, has come to my knowledge, and the present steady coldness of the weather and hardness of the frost, seems intirely to have checked the disease; it is not probable a single case of it exists in the city at this time.

of them originated in a small part of East George-street; and the greater part of the remainder near about, and just below the Fly-market. We are, therefore, naturally led to examine the situation of these afflicted spots, to ascertain the cause of its particular prevalence there. And, indeed, the southerly part of East George-street, where the complaint prevailed, (if we can suppose filth and putrefaction of any kind to produce it,) seemed well prepared for the purpose. The street itself, unpaved, was so rutted and broken up, in particular parts, as effectually to prevent it from being kept dry. Frequently, for some time after wet weather, it was almost impossible for footmen to pass through it, without miring half shoe deep; and, at the best of times, one fourth of this particular part of it was a filthy mud-puddle. Besides this, most of the houses are occupied by several families; all of whom have the yard in common; and really, upon inspection of these places, all of which are lower than the street, one's mind is struck with an idea that the several joint-tenants are not only determined not to clear away the other's dirt, but also that each one exerted himself to put, *at least*, his share into the noisome collection; because he had as good a right to make dirt as his neighbours. Hence these sunken spots became a dreadful mass of garbage and offal matters of every kind. This, however, was not the case with all: One house, the cellar of which contained fourteen persons, men, women, and children, black and white, all huddled together, having no yard at all. But here there was no loss in the end; for what of every refuse and excrementitious matter the yard would otherwise have gained, was here thrown into the open street; the common place for all kinds of putrefiable substances. But, beside this, at the upper part of this affected portion of the street, between four and five rods up Lumber-street, is a declivity that appears to crave every kind of rubbish that comes near it; nothing seems to be too gross for it; even the night-man's filthy load, as I have observed, here finds a free reception.

The cause of the prevalence of this disease near the Market, appeared very evident upon examining the spot. The south-eastern end of Pine-street, (S on plate II.) lies considerably lower than the dock which is continued from it; so that it there keeps a constant puddle of stagnant filthy water and mud. But this is a mere trifle in comparison to its pestilential neighbours. The slips (f S) on each side of this central spot, have been left, during the summer, to be fortuitously filled up by the free contributions of the neighbourhood. Hence they became the common receptacles of rubbish and filth of every description. I have seen in them the guts and trimmings of fish, shavings, the clearing of shops, mud, that appeared to have been the cleaning of sinks, cabbage leaves, potatoe peelings, &c. &c. and further, to render this noisome collection the more complete, the necessary night-man did

not fail to do his part: more than once have I observed their fulsome loads exposed in these places, and that even above the ordinary mark of high water. But beside all this, the spaces on the annexed plate, marked S with crosses, particularly that to the north-eastward of the dock, has, from its being open and so contiguous to the Market, become the common convenience to a multitude of people; and indeed so effectually have they bespattered the ground with their excrementitious depositions, that it requires a good degree of circumspection in walking there, to tread clear of the filth.

Havens and Suydam appear to have taken their complaints in an atmosphere contaminated by the emanations from the exposed flat at the inlet by Lynch and Stoughton's wharf. This inlet, including the spaces under the adjoining buildings on each side, which are set upon piles, exposes a surface of mud and every kind of filth that is constantly gathering in such places, of at least one hundred square yards at low water: and, as though it was feared that the parts under the stores should not receive their share of what is so freely thrown into such reservoirs, several of the boards of the platform before the door are left loose, so as to be taken up at pleasure: and, indeed, the pile that is heaped up under the opening shews that it has well answered its purpose. Still more completely to involve this dock in the most offensive effluvia, at the end of it is affixed a conveniency, erected, it is true, over the water; yet, with seeming care, such obstructions are introduced under it as to support great piles of matters, not less offensive to the smell, than disgusting to the eye. Havens attended and slept in a vessel that lay at this very wharf; while Suydam attended his store about eighteen yards from it, and in a direction for the regular southerly wind to blow the whole power of this loaded atmosphere upon him.

Rogers lived in a part free from the circumstances attending the residence of the afore-mentioned persons. Might he not have picked up his complaint at the Market?

Beers (.8) spent the day in a store between Beekman and Burling slips, which is remarkable for backing upon an inlet in the form of a T, that opens into Front-street. This place is unpaved, and, too much like many of the Philadelphia alleys, is bounded by the backs and gable ends of houses, and by yards, without a single hot fronting it. It contains upwards of 200 square yards; one third of which, at the most moderate calculation, is constantly covered with mucky filth of one sort or other. It may be thought strange that this place should furnish us with but one death. This may have been owing to two causes. In the first place, to its being surrounded, in great degree, by stores that are only inhabited during the day; and secondly, to most of the inhabitants near it being

old residents. However, two other persons, to my knowledge, have here suffered with the complaint, both of whom recovered. One, Moses Judah (02), occupied and slept in the same store that Beers attended: and the other, George Burchell (01), resided in a house at the corner of this place and Front-street. They both had removed to this place this year, and Abel Beers (Judah's apprentice) had never spent a summer in New-York before.

Holmes, who died at the Hospital, took his complaint in Chesnut-street, the next door to the corner of Bancker-street. This same spot, at the junction of these two streets, is unpaved and sunken, and seems not only to solicit the accumulation of every thing worthless or unclean, but also to forbid the idea of any attempt to clean it out, lest it would make the pond the deeper. Indeed, so remarkable was this spot, as to make me, as early as the 7th month (July) last, request both of the Health Commissioners and the Alderman of the ward, to give some attention to it; as I considered it a place highly favourable to the promotion of Yellow Fever. However, it was not amended. Fortunately for the remaining inhabitants, they were a hardy set; most of them had undergone the fiery trial of 1795, in their families, and the remainder were old residents in town, as I have been informed, excepting one person, who lived the very next door to where this man was taken; but he luckily had been several months of the summer out of town, and did not return till some time after Holmes died.

The last person mentioned as having died of this complaint, resided in a healthy, cleanly part of the town: and how or where he could have taken his disease is still a mystery. Possibly he might have received it at some one of the sources above-mentioned.

These circumstances, being well considered and candidly examined, I think must clearly prove to every unprejudiced mind, that in this city there appears to be an intimate and inseparable connection between the prevalence of the Yellow Fever, and the existence of putrid effluvia: whether it be septon or hydrogene, or whatsoever other peculiar principle that is the active ingredient of their composition, is not my business at present to inquire into; nor shall I pretend to decide whether these effluvia alone are the sole or original cause of the complaint; or whether, merely like a smothering hot combustible, it burns only after having received a spark from elsewhere. However, from some facts, particularly that from the Busbridge Indianan, (*Annals of Med.* vol. I.) and others that might be brought if necessary, it seems highly probable, that such matters may, of themselves, sometimes burst out as it were, into actual flame at some point; from whence a general conflagration may spread through and involve the whole of these susceptible materials.

In 1795, from the inseparable connection observed to exist between this disease and putrid miasmata, I had strong suspicions of their being its sole cause; and, indeed, the evidence then adduced to the contrary, by the advocates of importation, being so weak and ungrounded, seemed rather to support the idea: however, from subsequent inquiry, and more minute information, in regard to some circumstances, not then so generally known, it now appears to me probable, that a foreign *fomites* might at first have excited our pestilential vapours into the action that spread such devastation in the most afflicted part of our city.

The brig *Caroline* arrived from Hispaniola on the 19th of 7th month (July), 1795, and hauled in at Dover-street wharf on the 20th; where, on that and the two following days, she discharged her cargo. She had lost one hand on her passage, his symptoms unknown. George A. Valentine, who attended the vessel after her arrival, was taken ill with the fever on the 25th of the same month, but recovered. On the same day, "four persons from "on board the ship *William*, from Liverpool, which arrived here "several weeks before, (all the hands having, previous to that day "and during the voyage, been perfectly healthy) were taken ill "with fever, attended with a yellow skin, hemorrhagies, vomiting "of black matter resembling coffee grounds, &c. and all died "within seven days." (Health Committee's Letter to the Governor.) It may be observed, that this ship and the *Caroline* lay at opposite sides of the same wharf, and that the people of both were employed on this wharf, at the same time, in unloading their cargoes.

On the same day also, "the owner of the ship *Connecticut*, "that had lately arrived from some part of England, and which "had drawn in at the next wharf, about the 20th or 21st of this "month, was seized with the fever, from which he recovered; "and about the same time, one of the mates, the steward, and two "of the hands, were seized in the same way, and all died." (Smith's Letter to Buel.)

Benjamin Paine, a custom-house officer, who was at that time attending the brig *Active*, which lay in the same slip, was likewise attacked on the 25th: he died on the 30th.

William Fitch's clerk, who was occupied in a store on the next wharf to where the *Caroline* lay, was taken on the 26th, and died a few days afterwards.

A. Jenkins, at the head of the wharf, was attacked on the 30th or 31st, and died. A few days afterwards, several of his family were taken sick, and the disease began to spread through the surrounding neighbourhood.

The circumstance of so many persons being taken on the same day, renders it highly probable, that some common cause of this

disease must have been introduced by the Caroline; since, had the contagion arisen from the pre-existing circumstances of the place alone, it is not likely that it would have shewn itself in so many instances at the same time. In that case, we should have looked for one to have been first taken, from whom a principle might be derived to stimulate the vapours of that noxious neighbourhood into their pestiferous operations. Had the disease, in these instances, originated solely from the surrounding filth, we should not have expected to find the men of the Connecticut, and those of the William, taken at the same time; since the former had drawn in there only *about* four or five days, whereas the latter had lain there for "several weeks" before they were taken sick.

In 1796, the brig Patty, Capt. Snow, from St. Bartholomews, arrived on the 28th of 6th month (June), and not July, as erroneously stated (probably by an accident of the press) in Dr. Bayley's Letter. (Medical Repository, No. I. Appendix.) This vessel drew in at Delafield's wharf; which is the next to the dock that was then filling up, and is adjoining the Exchange-slip; and although "*none of the crew had been sick of a malignant fever,*" still she might have brought a *fomites* sufficient to set the putrid miasmata of such a place into a pestilential action. Jonathan Thompson, a shop-keeper, who lived No. 24 Moore-street, but a short distance from this dock, and upon which he was in the daily habit of taking his walk, became sick on the 4th of 7th month (July), and died on the 10th, with well marked symptoms of a highly malignant Yellow Fever. Capt. Neal's wife, who resided half way between the Exchange-slip and Moore-street, in Front-street, was seized on the 7th, and died on the 10th. Nathan Strong died on the 17th; from which time the disease became more and more general about the neighbourhood of the dock that was filling up, as stated in the letter just referred to.

The first person who died this year about the disemboquement of Roosevelt-street drain, if I am informed rightly, was James Callender (.1 on plate I.). He was a labouring man, who was employed somewhere towards the lower end of the town; and perhaps he was affected with the complaint from being about the Exchange; and transported, by his disease, the seeds of infection to that fertile neighbourhood in which he lived.

In 1797, the first person that was taken sick in East George-street, was W. Cummings: he arrived the 13th of 8th month (August), in the sloop Polly, from George-town, South-Carolina. One hand died on the passage, and Cummings was slightly indisposed at the time of his arrival, with what he supposed an ague and fever, but was not taken seriously unwell till two nights after he had lodged in this street. It may be, that a partial principle of death lurked in his system, during the whole time after the death of his

comrade, and most likely, never would have seriously acted upon him, had he not immersed himself in this or some such like fury-fostering miasmata. From him the disease seems to have spread. Two of his next door neighbours fell under its power, and it extended itself, as above related, through all the most offensive part of this street.

— Kelly, of the brig *Bellona*, (which arrived the 3d of 9th month (September), from Savannah, with all her hands and passengers in good health) unfortunately pitched himself within the noxious effluvia of the Fly-market; and, still more certainly to fix his fate, lodged in a room, two of the windows of which opened towards the places where the putrid collections were gathered, and from whence the southerly winds must have brought their vapours immediately upon him. He is the first that appears to have had the disease in that neighbourhood; and perhaps the effluvia arising from his body, united with the putrid vapours emitted from the collections before noticed, spread the complaint around this little vicinity.

Another of the hands from the same vessel, took up his quarters at Chesnut-street; where he met with the necessary ingredients to bring his latent poison into life. He was afterwards taken to the New-York Hospital, where he died. It may seem somewhat strange, that the cause of disease that must have been kindled up at this spot did not affect any of his neighbours; probably, from circumstances already mentioned, they were proof against its operations.

The systems of the two persons who lived at or near Lynch and Stoughton's wharf, being richly loaded with the emissions from that offensive spot, might possibly have caught a spark of excitement in passing near the Market.

George Burchell may have taken his disease, after having been immersed in the effluvia from the inlet between Burling and Beekman slips, from the hands of the same vessel, as they frequented his shop immediately after their arrival. He probably set the whole materials in action, whence Beers and Judah were afterwards affected.

The other persons mentioned in the list of deaths, may have received the cause of their complaints at one or other of the aforementioned sources.

These circumstances render it probable that the cause of Yellow Fever, in the particular parts of our city, has, of late, been set in action by an enlivening spark from abroad. However, I do not consider it as decidedly determined. It is possible that Cummings, having suddenly changed from a purer air, with his already infirm body, to this hot-bed of putrefaction, may, from those predispositions, have had the disease created in him, before it had ripened

in the bodies of his neighbours; and he thence may have introduced the principles of his complaint to the surrounding air.

Just arrived from sea, and of a profligate habit, Kelly might thence have been a person, more than any other about the market, prepared for the deleterious operation of the putrid vapours in which they were enveloped; and thereby have been first affected by surrounding causes of fever; and, in turn, may have imparted a principle to the air, that usuriously repaid it for its fatal effects upon him.

And although James Callender worked towards the lower end of the town, there is no proof of his having brought his complaint, or even of his having been at Whitehall. Nor, indeed, is it certain that the Patty imparted any principle of disease to the poisonous vapours of that neighbourhood.

The Caroline, it is true, lay at Dover-street wharf for some days before the people thereabout became sick; and although such a number becoming suddenly sick, at the same time, and so soon after her arrival, render her very justly suspected, still it is possible, that, from the particular and similar predisposition of most of them, only one having been an old resident, and, all excepting three, having lately come from the same place, and having been alike accustomed to the same habits of diet, exercise, &c. they may have had the complaint generated and arrived to maturity in them all at the same time. From which beginning, the disease might have been communicated to the whole of that peculiarly filthy part of our city, in 1795, without the necessity of believing that the Caroline brought any deleterious principle from Hispaniola. Although the circumstance of some of these people having lain at that place a much longer time than the others, and others again having continued there during the whole summer, shew, beyond a doubt, that some cause of the complaint must have *began* to operate after the 20th of the month, still this does not necessarily devolve upon the Caroline: perhaps some particular change in the air,* or some other peculiarity might have occurred, just at that time, to have given the putrid miasm its rankest perfection.

Whether the complaint is ever generated by putrefaction *alone* or not, still I am rather inclined to believe, that, *generally*, in our city, it has been set in action by an *assisting* cause from abroad. For, did simple putrefaction of itself give rise to this complaint among us, we should expect to find more or less of it, in that row of tenements called Moore's buildings, in the years of 1796 and 1797. For although those buildings are set upon high

* It must, however, be acknowledged, that no particular change was evident in the *temperature* of the air. (See the Meteorological Observations in my account of the Epidemic of 1795).

ground, still they are upon a perfect level, and are the most crowded with, perhaps, the most dirty set of residents of any in the city; and these chiefly newly arrived Irish people. Still I cannot learn that a single case of Yellow Fever has been there for these two years past. And, I can hardly believe, that if a person with that complaint had been introduced among them about six weeks ago, but that he would have spread mortality around him.

In East George-street also, during the last year, we should have expected to find, at least, a few cases of the complaint; yet I cannot, notwithstanding the most diligent inquiry, find a single instance. Had a single instance occurred, probably it would have caused a general prevalence there.*

In addition to this, it may be observed, that the singular filthiness that has existed in different parts of our city, and particularly about some of the slips, towards the lower part of the town, for several years before 1791, was not attended with any material injury to the health of those in its vicinity; at least, we have no account of the Yellow Fever's spreading around them.

In the years 1792 and 1793, the mud machine was employed in clearing out the docks, the same as in the preceding and the succeeding years. But we heard of no Yellow Fever being the consequence.

But that the simple emanations from a person under the Yellow Fever, without the joint action of putrid miasmata, *will not* produce a like disease in another person is very clear, not only from the many facts heretofore adduced in the accounts of that disease, as it appeared in 1795, (see Webster's Collection of Papers) but also from the confirming occurrences that have happened this year. The person supposed to have enkindled the disease in East George-street, as well as the one at the Market, were both conveyed to, and died at Bedlow's Island; yet none of the boatmen that took them there, nor any of the attendants, nurses, or those confined in the Lazaretto with other complaints, suffered any indisposition from them. A person, as I am informed, who took his complaint

* I am aware of an objection that may be made to this idea, in accounting for the healthiness of this street in 1796; first, that the preceding year's depopulation, and the dreadful character that the street sustained thereby, probably prevented it from being so crowded as before and since; and, secondly, that the street having been filled up during that summer might prevent so great an accumulation of filth. In answer to this it may be remarked, that notwithstanding the character of the street, it had not been observably more thinly inhabited; and although the street was filled up that year, yet that was done in the fore part of the summer, and some time before the sickly season, and that the yards were equally unfavourably situated as before or since; and that although the filling up of the street might have had its use, still we can hardly believe such a partial business would have produced such an entire exemption from this disease, had filthiness been its sole cause.

at Philadelphia, was also carried to the Island, and was there attended by his friends, who had come directly from the fresh free air of the country, and with as little inconvenience. Two of the patients afore-mentioned died at the New-York Hospital, one from the market, and the other from Chesnut-street; yet they communicated the disease to no one there. Parsells, who died in Cedar-street, infected no one in that neighbourhood. Nor did Suydam spread any disease around the Exchange where he died; and Havens' complaint terminated with his existence, in the upper part of Roosevelt-street.

To the foregoing circumstances may be added, that about the same time that Kelly and Holmes (the former of whom is supposed to have introduced the disease about the market) arrived from Savannah, there also were several other arrivals from the same place, none of whose hands, or passengers, as far as I can learn, suffered with a like disease;* probably from their having taken more eligible lodgings.

The simple result of the foregoing facts and observations appears to be,

I. That the general cause of the Yellow Fever, as it has appeared in this city, is what chemists call a *tertium quid*, neither one thing nor the other, but a result of the junction of certain matters emitted from a human body, labouring under such a disease, with the effluvia arising from animal and vegetable substances in a state of putrefaction.

II. That putrid effluvia may possibly, of themselves, generate the disease in persons highly predisposed, and from whom, by their assistance, the fatal epidemic may be spread through a neighbourhood.

III. That most probably, the spark that has kindled up the putrid vapours, in certain parts of our city, into action, was originally introduced from other places. And,

IV. As I have uniformly believed, and repeatedly expressed, "that no Yellow Fever can SPREAD, but by the influence of putrid effluvia." (Account of the Epidemic Yellow Fever of 1795.)

Hence then, the grand, the much agitated "question of importation or non-importation, as it respects the health of a place," to use the words of Dr. Smith, "sinks into its merited insignifi-

* This, perhaps, by some, may be thought inaccurate, as one of the hands of the Shepherdess died soon after her arrival here, and, as was currently reported, of the Yellow Fever; but, from inquiry, I do not find that his indisposition exhibited any marks of that disease. He did not vomit at all, at least after he was on shore; nor was he in any wise yellow; he being, when dead, according to the expressions of his wife, "as fair a corpse as any in the world."

"cance; the efficient cause, the *causa sine qua non*, being clearly discerned as depending on local circumstances." (Letters to Buel.)

To depend, therefore, for our safety from Yellow Fever, upon the rigours of our port laws, or the vigilance of our Health Officers, while these pools of putrefaction are suffered to remain, is like building a city with cedar and pine, and confiding in the *watch* to secure us from fire. But if these pregnant sources of destruction are dried up, we may, like those who case the wooden work of their brick-built, tile-roofed houses, with iron, rest at ease in our habitations, equally secure against the deceitful captain's intrusions, or the incautious sailor's blundering into our ports, in the one case, as, in the other, we should be of the vile incendiary's match or the careless neighbour's spark. As the latter would die in their own combustion, so the former would end in the fate of the single sufferers.

To rest our security from the Yellow Fever (should it finally appear that it is always imported) *solely* upon the slight precaution of making such vessels, from the West-Indies and Southern States, as may have, or may have had persons with that complaint on board them, do ten days or two weeks quarantine, must certainly be a very venturesome business. The *Patty* had not had any of her crew sick with a malignant fever. The people of the *Bellona* were in good health from their leaving Savannah, till some days after they were in this city. And the *Polly* might have done the usual quarantine, without any security to us, as Cummings was not seized with his disease till seventeen days after his arrival.

Nothing less than completely prohibiting all commercial intercourse from the Southern States and the West-Indies, during the summer and first fall months, or (what would, in the end, amount to the same thing) making every vessel from thence do full quarantine, and have their cargoes unloaded and properly unpacked and ventilated, before they are permitted to come into our city, can ensure us against the introduction of a cause of the Yellow Fever: however, these severe restrictions may be superceded by merely having ourselves properly prepared. If we only keep decently cleanly, it will be perfectly indifferent to us, whether a Carolinian or a West-Indian should die with Yellow Fever in our city or in our harbour; since, then, we should be guarded against any ill effects from them.

New-York, 10th Month, 1797.

V.

OBSERVATIONS on the Nature and Treatment of the MALIG-
NANT OR YELLOW FEVER, which prevailed in the Island of
Grenada, W. I. in the years 1793, 94, and 95, in a letter
to DAVID HOSACK, M. D. &c. from JOHN STEWART,
M. D. &c. &c.*

New-York, Nov. 12th, 1805.

Dear Sir,

I HAVE received your favour of this date, desiring informa-
tion concerning the fever which appeared, and proved so fa-
tal, in Grenada, in March, 1793. I feel much disposed to
comply with your request, but regret that my time will not
allow me to do so in a manner satisfactory to myself; at all
events, I hope you will make allowance for any inaccuracy I
may commit in referring to circumstances which occurred so
long as twelve years ago, especially, as I am possessed of no
memorandum respecting the disease, all my papers having been
destroyed in the insurrection which occurred in that island in
1795.

It may be necessary to premise, that I had been engaged
in an extensive practice in the quarters of St. Andrews and

* None can be ignorant of the name of Dr. Stewart, who are at all acquainted with the controversy which has so long engaged the attention of medical writers, relative to the nature and character of the yellow-fever, as it has prevailed in the United States, and in different parts of Europe. Our readers will recognise in him one who occupies a distinguished place in the list of those great men who have supported and defended the doctrine of the contagious nature and specific form of this disease. His great learning, and extensive practical knowledge, eminently qualify him to act as umpire on this subject, and stamp his opinions with an authority not to be impeached by the gross aspersions and futile reasonings of a host of ordinary writers.—ED.

St. Patricks for nineteen years previous to the period referred to. My place of residence was on the east side of the island, and on the confines of those two parishes, about twenty-four miles from St. George, the capital, and upwards of four miles from Grenville Bay, the second harbour in the colony; the tract of country between my abode and the latter, is flat, and the shore low and swampy; it is consequently extremely unhealthy in the fall of the year. I had become, of course, well acquainted with tertian fever, under its various forms, of intermittent, remittent, and continued types. It is, however, worthy of remark, that I do not recollect an instance of an epidemic disease occurring among the white inhabitants, in any part of the island, from January to July or August, previous to the year 1793.

My first acquaintance with the fever in question was as follows: In the month of March of that year, I went on board the ship *Adventure*, then lying in Grenville harbour, to visit the carpenter, at that time under my charge, for a gunshot wound in his hand. While there, Captain Remington arrived from St. George's by sea; he had come round in a drogher, and had had heavy squalls, with rain, in his passage to windward. He then complained of being feverish, and seemed low spirited; he had heat of skin, his pulse full, and under one hundred, head-ache, pain in his back and limbs, and over his whole body. These symptoms I imputed to cold, caught in his passage up, and accordingly took eight ounces of blood from him, which, unexpectedly, neither exhibited the buffy coat, nor the coagulum any degree of contraction, or consequent separation of serum. He took an emetic of ipecacuanha in the evening, and a dose of glauber salts the following morning. During three days, I continued to visit him, his pulse did not exceed one hundred, nor was the heat of skin considerable; he took, occasionally, small doses of antimonial wine, with the addition of laudanum at bed-time, and made

free use of tepid drinks. At the end of that time, I was under the necessity of putting him under charge of a neighbouring practitioner, having a call to the other side of the island. On leaving him, I certainly did not entertain any idea of his being in danger; I was, however, forcibly struck with, and could not well account for, an uncommon degree of despondency of mind that was then present, and it was not possible to remove the impression, that he was to die; nor was I the least surprised, on going to Grenville some days after, to be told of his death; and, more especially, to hear of that event having been preceded by hæmorrhage from his nose, stomach, mouth, and urinary bladder. On this occasion, while in conversation with some gentlemen on the fate of this unfortunate man, I could not help noticing the malignancy of the case, and the difference in the train of symptoms from what I had ever witnessed to take place in the worst cases of our endemic fever. But a few minutes had elapsed, when a gentleman arrived from St. George's; I had no sooner mentioned Capt. R.'s death to him, and my surprise thereat, when he instantly replied, it was none to him, for Capt. R. had eat and slept on board the ship *Hankey* during several days that he was in town. This was the first notice I had of such a vessel being in the colony, and, therefore, anxiously requested he would explain himself. This he did, by saying, that the *Hankey*, Capt. Cox, had arrived some time before, after carrying a number of settlers from England to the Coast of Africa, where she had remained for some months, and that during her stay, the greater part of those unfortunate people had been carried off by fever; and concluded, by saying, that there was at that time a cursed infection lurking on board of her; that the mate of the ship *Baillies* had died, or was dying, and several other seamen were very ill when he left town. The melancholy scene that afterwards followed at St. George's, in '93 and '94, is well and amply described by my respectable

ble friend, Dr. Chisholm, in his well known work on West-India Diseases.

Capt. Remington had been removed on shore the day preceding his death ; but no case of fever occurred, either in the family where he died, or on board of his own ship, his cloaths and bedding having been destroyed, and every precaution taken to guard against infection, in consequence of the information above referred to.

The fever was, however, brought soon afterwards to Grenville harbour, by a ship or two that came from St. George's to load for England; and from them the disease was communicated to other vessels lying there. A few cases of this fever also occurred in the village of Grenville, but it did not spread.

An insurrection of the negroes broke out in the island early in March, 1795, and soon thereafter, I believe in May, this fever again appeared. It became frequent in the town of St. George's, in the course of the fall, and proved fatal to many of the inhabitants, in consequence of the deprivation of their usual comforts, and the fatigue they had undergone for several months before. I resided then chiefly in town, and had an opportunity of seeing a great many people labouring under the disease. As to the *character* of this fever my experience has fully satisfied me, that it was specifically distinct from every form of the indigenous tertian remittent which I had ever observed ; because it appeared at a season of the year which I had always found healthy, during a period of nineteen years I had resided in the colony.

Because it did not particularly appear in those situations where bilious remittent fever usually prevailed during the unhealthy season of the year.

Because there was an evident difference in the character and type of the two diseases ; there was a greater despondency of mind in this fever ; the eyes were more muddy and inflamed ; there was commonly a deep seated pain in the eye-

sockets; the motion of the eye-balls was attended with uneasiness; the pain in the back and limbs was greater than in bilious fever; the vomiting was not of so violent and straining a nature, nor were there such evacuations of bilious matter; the black vomit, which I consider one of the characteristics of this disease, generally occurred at an early period; the yellowness was of a dingy hue, not of the real icteric tinge accompanying cases of bilious fever; the delirium was in many instances of a peculiar nature and much resembling a state of intoxication; hæmorrhage was more frequent, particularly by urine and from the stomach and intestines. Patients, on several occasions, made exertions, not long before death, that I never witnessed in bilious fever. I have known a patient to get up, dress himself and walk about his chamber a very short time before his death. Medical practitioners, before getting well acquainted with the deceitful nature of the disease, not unfrequently declared their patients out of danger when the fatal issue took place an hour or two after their departure.

Because I never knew this fever terminate within a few weeks in intermittent, as tertian, remittent, or bilious fever commonly does.

Because the degrees of weakness produced by this fever is greater, and the recovery of flesh and strength are more gradual and slower in this than in bilious fever.

Because I did not find the same mode of treatment consonant in both cases of fever; for the early, bold and free use of bark, which I have found very generally to answer in bilious fever, seemed to aggravate this fever, and to hasten the fatal issue. Do not consider me whimsical when I assure you, that I was very often sensible of a peculiarly bad taste in my mouth while by the bedside of my patients, and particularly if blankets were used as a covering.

That this fever was contagious, I concluded from the manner in which it broke out and spread. It first appeared in two or three vessels that had a communication with the Hankey;

and from these sources it gradually extended itself to other vessels in the harbour ; but not to all, for where attention was paid to prohibit communication with infected ships, such vessels escaped. After some time it got on shore, both into town and in the garrison. There is also reason to think that it was carried from thence to the adjoining islands, as it appeared at most of those to windward within two months of its breaking out at Grenada ; and some time thereafter it showed itself at Jamaica, and alternately, I believe, in September at Philadelphia.

Its contagious nature also appeared from many instances of men, in 1793, and 1794 going to St. George's on business, and being attacked a few days after their return to the country with this fever, to several of whom it proved fatal ; but I must observe that I met with no instance of the disease being communicated to others, either visitors or attendants. It is indeed true, that every attention was paid to keep the chamber of the sick well aired, their linen frequently shifted ; and when a fatal issue took place, every article of wearing apparel and bedding was commonly destroyed.

From knowing several instances of young men who got wounded in 1795 and 1796, having been sent for convenience and proper attendance, to town, and during their cure were attacked by this cruel disease, and on some occasions fell a sacrifice thereto.

From instances occurring of people expressing a consciousness of the time when they received the contagion while visiting acquaintances labouring under the disease.

From a thorough belief in the minds of all the medical gentlemen in Grenada who witnessed the disease, that it was so ; let it be observed, however, that one of the most respectable practitioners in St. George's, and a particular acquaintance of my own, would not allow at *first*, that it was contagious. And lastly,

From a full conviction that I, as well as some other medical gentlemen, contracted the disease in our attendance on the sick.

Respecting the propagation of this fever, I am decidedly of opinion that it was occasioned by visiting infected apartments, or by the near approach to, or contact with people labouring under it. There is every probability also, that the infection was brought to Grenada by the Hankey; but what its nature was, or whether it originated on board in consequence of the number of sick crowded together while labouring under the endemic of a warm climate, and that in a sultry, moist atmosphere, or whether it proceeded from the infection of jail fever, carried from England, and which only showed itself in circumstances favourable to its propagation, are questions I do not take upon myself to answer.

That vegetable and animal matters in a state of putrefaction do produce disease, is not to be denied; but that vegetable matter only in a state of corruption is on many occasions harmless, is evident, from the very offensive heaps of cotton seed, and the pulpy covering of the coffee berry which are daily to be met with in Demerara without being considered as a cause of fever; nor should this circumstance be omitted, that when fever does prevail, it is at a season when those causes do not act powerfully.

In respect to the cure, various methods were tried by different practitioners; but I am sorry to say the proportion of deaths was great under every mode of treatment. The plan I generally pursued was to administer as early as possible a brisk purge of jalap and calomel; and after the operation of this medicine I had recourse to small doses of James' powder from time to time while the febrile action lasted; to this was occasionally added a little calomel to keep the bowels open; and the warm bath, with a large allowance of lime juice, was sometimes had recourse to, in order to aid the antimonial in deter-

mining to the surface ; ultimately bark was given ; blisters, opium, spirit. nit. dul. æth. were had recourse to according to the nature and the urgency of the symptoms that occurred.

When the fever first appeared, I had great reliance on a free and early use of the bark, but a little time convinced me of my mistake. Blood-letting I used in two cases only, but it afforded no abatement of the symptoms, nor did the patients bear the evacuation well ; the appearance of the blood also, on which I place much confidence, did not indicate the propriety of repeating the operation.

Few men had made a more free and general use of calomel than I had done from the year 1780, in all cases of fever originating from a local cause, particularly in pulmonic and hepatic inflammation, and in dysentery. I had, however, never exceeded fifty grains in the 24 hours ; nor did it occur to me that the free use of this medicine could be had recourse to with benefit in the fever until it was strongly recommended by Dr. Chisholm. I accordingly tried it ; sanguine in expectation of benefit therefrom, but I am sorry to add that it did not prove an effectual remedy in my hands.

Under these circumstances you may readily suppose I felt much alarmed when this fever again appeared in 1795 ; and it gave me pleasure to hear of a new remedy which had been tried and proved successful in one case ; this was the cold bath. I instantly had recourse to it, and the more readily on recollecting to have used it myself so long before as 1776, in a number of cases of confluent small pox, and with the most evident beneficial effect.

The consequence was, that I had reason to think many lives were saved by it. The manner of applying was by dashing two or three large pails-full of sea-water on the head and shoulders with force, laying the patient immediately after between blankets and supplying him frequently with warm tepid drinks ; the effect expected, and that frequently ensued, was

a full and free perspiration. If this did not ensue the James' powder with a little calomel was occasionally repeated, as was the cold bath generally three or four times a day. I trusted to the cold bath entirely in my own case in Sept. 1795, having previously taken a dose of jalap and calomel. The good effect of the cold bath on this occasion I mentioned to Dr. Chisholm, but not having perused his second edition, I do not know whether he has noticed it. He also was made acquainted with the little benefit I derived from exhibiting the calomel, as recommended by him in my practice.

The above is the result of my knowledge and experience in the treatment of the fever as it occurred in Grenada during the years 1793, 4 and 5.

Yours, &c.

JOHN STEWART.

Dr. DAVID HOSACK.

VI.

*FACTS relative to the contagious nature of the YELLOW FEVER in the pure air of the country: In a letter to Dr. WILLIAM CURRIE, of Philadelphia, from DAVID HOSACK, M. D. member of the College of Physicians of Philadelphia, &c.**

New-York, May 30th, 1805.

Dear Sir,

You will find among some of my letters addressed to you upon the yellow fever, an imperfect memorandum of this dis-

* The yellow fever is generally considered a non-contagious disease in the pure air of the country : yet that it is at times contagious even in such situation, the accounts published by the College of Physicians of Philadelphia, have fully proved. For further evidence, if it were necessary, we would refer to the interesting communication of Dr. R. C. Moore, contained in vol. 2d, p. 22—25, of the Register; to p. 177, of the same volume, and to the present article now first printed.—E6.

ease having been communicated by contagion at Huntington on Long-Island.

I this morning availed myself of an opportunity which presented of obtaining a more satisfactory and circumstantial statement of the facts than I have hitherto been able to procure. This information I received from Mrs. Dorothy Conklin, the present wife of Mr. Richard Conklin, who resides at West Neck, four miles distant from the town of Huntington, and in whose family the disease prevailed with almost unexampled mortality. The present Mrs. Conklin, at the time the yellow fever prevailed at West Neck, was a friend and neighbour of Mr. Conklin ; attended his family in their sickness ; saw them in every stage of the disease, and had the best opportunity of knowing the facts she has stated to me : these I shall relate as nearly as possible in the order and language in which she communicated them.

In the summer of 1795, when the yellow fever prevailed in New-York, Mrs. Smith, the daughter of Mr. Conklin, resided at Peck-slip, to which part of the city the disease was chiefly confined in that year. Mrs. Smith, upon being taken sick, went immediately to her father's house at West Neck, where she died three days after with the black vomit, and her skin, to use Mrs. Conklin's expression, as yellow as saffron. Her brother, who resided in New-York, was taken sick about a fortnight after ; he also went to his father's house at West Neck, where he died after three or four days illness with the black vomit and a yellow skin. During his illness, Mrs. C. adds, he bled much at his nose. His mother, Mrs. Conklin, who had constantly attended upon him, and washed his clothes, was next taken sick, and died in less than a week after the death of her son. The present Mrs. C. (then Mrs. Bush,) was constantly with her, and states that she laid in a state of stupor several days ; that she had the black vomit, that her skin turned yellow, and was remarkably spotted.

Doctor Sandford, who was the physician of the family, and had been very constant in his attendance upon them, was next taken sick. He felt much indisposed while Mrs. Conklin was dying; he went home, but never afterwards left his house; he died in a few days. His attending physicians unanimously pronounced it to be the yellow fever. Mrs. Conklin visited him in his illness. His bed being opened by Mrs. Sandford, Mrs. C. observed his skin to be very yellow, and was at the same time sensible of an extremely offensive smell, such as she had observed in no other sort of fever. She now was fearful of having taken the disease, especially as she had been so much exposed to it. She immediately took a dose of salts, and the day following began the use of bitters, to which remedies she ascribes her exemption from the disease.

In the summer of 1793, when the yellow fever prevailed with its greatest mortality in New-York, another daughter of Mr. Conklin, named *Polly*, fifteen or sixteen years of age, came to town upon a visit to her friends. At this time she very imprudently visited Mrs. Jones, (wife of William Jones,) who was then dying of the yellow fever. She returned home to the country; and immediately upon her return was taken sick with an acute pain in her head, back and limbs, attended with a very violent fever; a profuse purging came on, which Mrs. Conklin considers as having been very serviceable, as her fever soon after abated, and she recovered. As to the nature of the fever she states, that the physician had no doubt; he pronounced it to be unquestionably the yellow fever. The result proved an unhappy confirmation of his opinion. Her niece, the daughter of Mrs. Smith, about three years old, who was constantly with her during her illness, and laid upon the same bed, was next taken ill with fever, attended with an incessant vomiting: she died in less than a week. Another daughter of Mr. Conklin, named *Patty*;

about twenty years of age, who had had the particular charge of the child, had never left the cradle, and who had also attended upon her sister, was next taken sick. She began to complain before the death of the child; she was attacked with chill and fever.

Dr. Udall, who had resided in the West Indies, and had been very conversant with this disease, was called; he pronounced it to be the yellow fever, but encouraged Patty very much, telling her she would no doubt get well. As is frequently the case in this species of fever, the physician saw no cause of alarm even when the greatest danger existed. The black vomit soon succeeded, she became delirious, her skin assumed the yellow colour, and she died in less than three days from the time of her attack. A boy about 12 years of age, who had been taken into Mr. Conklin's family as a domestic, was next taken ill; he had been frequently in the room of the sick, and had been especially attentive to the youngest child, (the daughter of Mrs. Smith,) of whom he was very fond: he was attacked as the others had been with acute pain in the head and back, with vomiting, in a short time he became very yellow, and the discharges by vomiting, as black as the grounds of coffee, to use Mrs. Conklin's expression. Although he was taken sick a day or two before Patty died, he did not survive her more than two days. Mrs. Conklin being very much alarmed by the great mortality of this disease, did not visit him but once, and only when he was first taken ill. Her husband, Mr. Brush, was obliged to lay out this lad, which disagreeable office Mrs. Brush had performed for all that had already died in the family. Such was the dread excited by this disease that it became almost impossible to procure the necessary assistance for the sick; the mother of the lad was so much alarmed that she never visited her child during his illness. The boy, it was supposed, took his disease from the youngest girl whom he had caressed and fre-

quently carried about in his arms during her sickness. The next person in this distressed family who was seized was Sally Long, about 17 years old, a cousin of Mr. Conklin. She had lived in the family of Mr. Brush as a spinster. Mrs. B. now Mrs. Conklin, having by her dread of the disease been compelled to return home, Sally Long volunteered her services and attended upon Patty and the boy. In a day or two after the death of the latter she was attacked with the same symptoms as the others had been. As the disease proved so contagious, Dr. Udall now advised the family to remove from the house. Sally Long was immediately conveyed to the house of her father Capt. Long. She recovered after several days severe illness.

Mr. Conklin's eldest daughter, Mrs. Place, wife of Capt. Place of the town of Huntington, had visited her sisters at West Neck ; had been a few days at the house, and had attended some of the family last sick. She was next taken ill, and was removed to the house of Mr. Place, her father-in-law. Her symptoms were similar to those of the other sick, but not in so violent a degree. Her skin, Mrs. Conklin observes, was yellow and the irritation of her stomach considerable, but she recovered. Upon the day Patty was buried, her brother, Harry Conklin, who had attended upon her in her illness and was at her funeral, was taken sick. On his return from her funeral he began to complain, expressing to his uncle Jesse his disagreeable feelings, and his apprehensions that he had taken the fever. He remained that night at his father's house, but upon the succeeding day was removed to the house of his father-in-law Mr. Gilbert Carr, where he died in a few days. He was attended by Dr. Udall. Mrs. Conklin also adds that his skin became yellow; that he had the black vomit, but that he, to the astonishment of every person, retained his senses to the last moment, conversing upon religious subjects with the most perfect composure.

It will be proper to add that the town of Huntington and its neighbourhood, is remarkably healthy; its situation high, and has a northerly exposure.

If it were necessary Mrs. Conklin will at any time add her affidavit of the correctness of the foregoing statement.

I send it to you without comment, to make such use of it as you think proper.

Your's with respect,

D. HOSACK.

The following is the certificate of Dr. R. Udall, who attended the family at the time they laboured under this calamity.

New-York, Nov. 15, 1809.

Sir,

AFTER a careful perusal of the statement made by Mrs. Conklin; of the fever as it appeared at Huntington, on Long-Island, in the years 1795 and 1798, I have no hesitation to say that the facts it contains are correctly related by Mrs. Conklin, and that she is a lady of respectability and veracity, and can give you a more correct statement of it than you can otherwise obtain.

RICHARD UDALL.

DR. HOSACK.

VII.

ACCOUNT of the POWLES HOOK STEAM FERRY-BOAT, in a letter to Dr. DAVID HOSACK, from ROBERT FULTON, Esq Fellow of the American Philosophical Society, &c.

(See the annexed Engraving, by Leney.)

[The perfect success of Messrs. Livingston and Fulton in their invention and establishment of steam boats for the accommodation of passengers between the cities of New-York and Albany, drew the attention of Mr. Durand, Judge

AN ESSAY
ON
T H E E P I D E M I C,
WHICH PREVAILED
IN THE NORTHERN DIVISION OF THE ARMY
OF THE UNITED STATES,
DURING THE AUTUMN OF 1812; AND WINTER OF 1812—13.
*Addressed to Wm. M. Ross, M. D. Hospital Surgeon of the
United States Army, &c. &c.*

COMMUNICATED BY
J. B. WHITRIDGE, M. D.
Corresponding Member of the Society.

Read the 3d of December, 1816.

Sackett's Harbour, April 20th, 1815.

DOCTOR ROSS,

Sir,—PERMIT me to offer to you, a few observations on the Epidemic of 1812—13, which prevailed throughout the northern division of the army, (stationed at Plattsburgh, Burlington, Greenbush, and Buffalo,) and throughout an important section of the Union, but *particularly* as it appeared in Burlington, Vermont.

I cannot say any thing of this Epidemic from any actual observation or experience, prior to December 1812; at which time I was stationed at

Burlington, where, during the autumn and winter of 1812—13, prevailed in its most violent form, that Epidemic, which pervaded the army, and a very considerable portion of our country which proved so destructive to the soldiers, and so deadly to the citizens; and which excited so much controversy, and speculation among physicians.

Many of the causes of this public calamity, are, perhaps, enveloped in darkness; some of them, however, are explicable upon the principles of physiology and philosophy.

Without entering into a minute and elaborate disquisition, on this very interesting and important subject, I shall leave it to your more mature judgment and deliberation, after noticing it in the following order :

I. I shall give a brief description of the disease, so far as it came under my observation.

II. I shall then cursorily mention its most probable causes.

III. Make some remarks on the mode of treatment, by different practitioners. And,

IV. What is my humble opinion, I conceive to be the best.

In order to be useful, it is necessary not only to know and describe the opinions of others, but to relate our own observations and particular experience.

It would here be proper to observe, that, previous to the appearance of the Epidemic among the soldiers of the army, who were first seized, and

among whom it raged with more violence than among the citizens, our army was at that time in its infant state; it was almost wholly composed of raw recruits; unaccustomed to the fatigues and hardships of a camp life. Their accommodations generally very bad; and that part which was on the northern frontier in October and November preceding the Epidemic, was very much exposed to the inclemency of the weather, on their march from Plattsburgh to Champlain, and also during their encampment upon the borders of Canada.

After remaining there some time, they broke up their encampment, marched southward, and went into winter quarters at Plattsburgh and Burlington; which terminated the campaign of 1812.

It would here also be proper to observe, that previous to the appearance of the Epidemic among the troops, a diarrhoea prevailed among them; they were afterwards attacked with the rubeola. This contagious disease spread generally throughout the northern division of the army, which, together with the local situation of the troops, the badness of their accommodations, (which were tents,) the scantiness of their clothing, and the coldness and dampness of the weather, produced a very irritable state of the lungs, which laid the foundation for the subsequent Epidemic.

I. The first stage of this disease, like most other febrile diseases, was generally ushered in by cold chills, preceded and accompanied by languor and debility. These symptoms were soon followed by

heat of the body, above the healthy standard; flushed countenance, and, in some instances, eyes suffused with blood. Severe lancinating pains were felt through the thorax, and sometimes in the head; accompanied by painful and laborious respiration, with a sense of weight and suffocation. The anxiety was great, and the skin dry;—where the disease proved mortal, the latter circumstance was remarkable, in so much, that perspiration could not be induced by any means whatever. These symptoms were not unfrequently accompanied by diarrhœa. Severe cough attended, and an expectoration of a yellow or white mucus, which was at first inconsiderable, but afterwards more copious, and generally mixed with blood. The tongue was at first dry, and covered with a white coat, which, in most instances as the disease advanced, soon changed to a dark brown, or black colour, especially in those cases that terminated fatally. The pulse was sometimes small, contracted, and hard; at other times, full, hard, and rebounding. In some instances, the pulse was said to have been soft and small; but I saw no cases, where there was not more or less hardness of it at the commencement of the disease. It may be observed, however, that I did not have an opportunity of witnessing the complaint when it first made its appearance, and when it raged most: perhaps I did not see the worst cases, particularly those that occurred in the fore-part of December.

The disease appeared to me to be in a great measure local, notwithstanding the inordinate action of the heart and arteries, which produced an excessive action of the blood-vessels of the lungs, and, consequently, of the respiratory organs;—the extremities were not unfrequently cold.

According to the statement of Drs. Mann, Lovell, and others, the complaint, in many instances, ran its course rapidly, and terminated suddenly; frequently in twenty-four hours, but generally lasted from four to six days, and sometimes longer. One very severe case fell under my care, in which the fever continued twelve days, and had a favourable termination.

In general, it appeared to possess a disposition to run rapidly into a state of indirect debility; this circumstance gave rise to the opinion among physicians, that it was a disease of debility; but which, in my opinion, only proves that it was a highly inflammatory disease, and of course required the most active antiphlogistic remedies at its commencement to obviate the inflammatory diathesis, and consequently, to prevent the subsequent debility. The constitution unquestionably suffers more from the inordinate action of the heart and arteries, where an inflammatory disease is suffered to progress without interruption, than from the sudden abstraction of stimuli, by the most powerful antiphlogistic means. The strength of the system is wasted; or, what is called by Brown *excitability*, and by Darwin *sensorial power*, becomes so far

exhausted, as to induce that state of the system which is called by the former *indirect debility* ; and which is more difficult of cure, than direct debility,* or what Rush calls *debility from abstraction*.

II. When a disease is regularly described, it is requisite to mention, or at least to inquire into, the remote, (viz. predisposing and exciting,) and proximate causes.

REMOTE CAUSES.

Of one of the remote causes of this disease, I believe very little is known. I confess, I am ignorant of it, and like others in similar difficulties, refer it to an unknown source, viz. *some peculiarity in the constitution of the atmosphere*.† To this, may be added with much reason and plausibility, previous diseases, and also dejection of spirits, occasioned by disappointed hope, in consequence of the unfavourable termination of the campaign.‡ “ Hippocrates, who has noted with accuracy the peculiarities of various years, together with the prevalent species of disease, attributes the variation of the maladies, to a divine something, *τὰ θεῶν* ; which some of his commentators consider as signifying merely the atmosphere at large ; but others, among whom is Galen, suppose

* Vide *Elementa Medicinæ*, Sec. XXII. XXXIII. XXXIV. and XLV.

† See a brief History of Epidemical and Pestilential Diseases, by Noah Webster, 1800.

‡ See Rush's account of the influence of the military and political events of the American Revolution, upon the human body. *Med. Inq. and Obser.* Vol. 1st, page 133.—Also, Vol. 3d, p. 4th and 49th, fourth edit.

that he intended to express a latent and inscrutable cause in the air, which produced these surprising effects.* Galen observes, in his commentary upon this point, “non quæcunque causas habent abditas et obsuras, *divina* vocamus; sed ubi admirabilia videntur duntaxat.” The modern Hippocrates, Sydenham, states that he had observed with the utmost diligence, the different peculiarities of different years, as to the obvious changes and conditions of the atmosphere, with a view to ascertain the causes of the great varieties of Epidemic disorders; but that he had not made the smallest approximation to such a discovery; on the contrary, that he had remarked, that seasons of the most decided similarity, in respect to the manifest qualities of the air, were infested by diseases altogether dissimilar, and *vice versa*. “For the constitutions of different years are various;” he says, “yet they do not depend upon the degree of heat or cold, of dryness or humidity, which accompanies them; but probably originate from some occult and inexplicable changes, wrought in the bowels of the earth itself, by which the atmosphere is contaminated with certain effluvia, which predispose the bodies of men to one or other form of disease. This predisposition continues during the prevalence of the same constitution, which, in

* See Hippoc. lib. i. de Prognost.—Galen in Com.—Also, Sennert. lib. iv. cap. ii. de Causis Pestilentiaë.

an uncertain period of time, is superseded by another.”*

From a consideration of the same facts, several writers have attempted to account for these supposed occult changes in the qualities of the atmosphere, which induce epidemic diseases, by tracing them to some of the obvious phenomena of nature, by which such changes may be supposed to be effected.”†

A cold and damp atmosphere.—Cold, however, applied to the body, but particularly the cold and damp atmosphere of the newly plastered barracks, into which the soldiers were crowded in great numbers, at Burlington.

Some *chemical combination* of the vital principle of the air with the lime of the newly plastered barracks, thereby rendering it unfit for respiration.

This cause was very much increased by the numbers crowded‡ into each room, for want of a sufficiency of barracks, which were not properly ventilated.§

Bad police, consequently foul camp.¶

* Syd. sect. i. c. 2. De Morbis Epidem.—See also, Van Swieten Com. ad Aph. 1408.

† Dr. Rees's New Cyclopædia. Article, Epidemic. American Edition.

‡ Dr. Rush's Observ. upon the Diseases of Military Hospitals, vol. 1, p. 148, of the Med. Inq. and Obs.—Also, Econom. Observ. on Military Hospitals, and on the Diseases incident to an Army. By James Tilton, M. D. Phys. and Surg. Gen. of the Army of the U. S.

§ Sir John Pringle's Observ. on the Diseases of the (British) Army.

¶ Vide John Hunter on the Diseases of the Army in Jamaica, page 285.—Also Sir John Pringle.

Intemperance in eating and drinking, but particularly in the use of whiskey.

Irregularities, which produce an unequal excitement of the system ;—*sanguine temperament*—“ *Sudden transitions from heat to cold, and vice versa.*”

Diet,—principally of animal food, to which the troops were unaccustomed.

Often deficient and depraved aliment.—This was a fruitful source of disease ; especially among raw recruits, and might have operated as a predisposing cause of this epidemic. It is not to be understood, however, that the rations, as furnished by government, were deficient in quantity, although (through the neglect of the contractors,) they were sometimes *unsound* : on the contrary, to an old soldier, or any one who knew how to make the best of his ration, it was amply sufficient,* but it may be considered coarse living and hard fare for the militia and recruits, who have recently left their families and their friends, and the domestic comforts of their homes ; where they had been accustomed not only to meats, but to a plentiful use of milk and vegetables, and most of them to tea and coffee ; which are almost invariably prepared,

* “ A soldier’s ration, as established by Government, consists of one pound and one quarter of beef, or three quarters of a pound of salted pork, eighteen ounces of bread or flour, one gill of rum, brandy, or whiskey ; and at the rate of two quarts of salt, four quarts of vinegar, four pounds of soap, and one pound and a half of candles, to every hundred rations.”

The ration of a British soldier as established by the British Government or by commutation, is less substantial, but more conducive to health—It consists of less meat, but more vegetable food, such as potatoes, peas, &c. and once or twice a week a quantity of rice and butter.

in this country, by women. Such were ignorant of dressing their own food for themselves; and until some system was formed, wasted one half their meat by broiling it in the ashes:—To such who had left their own fire-sides and feather beds, for the tented fields, or cold barracks of the frozen regions of the north, the situation was peculiarly hard and distressing. Although they were for a time, buoyed up by patriotism and the love of fame, which, together with the passing events of the war, and the anticipation of future successes, operated as a stimulus to the mind; yet their situation not unfrequently produced the *nostalgia*, or *home-sickness*, of Dr. Cullen.

Impure Water.—This was also a source of much mischief, not only at Burlington, but at almost all the different posts along the frontier; and, in combination with other causes, produced diarrhœa, or dysentery, throughout the whole northern division of the army.

The springs are generally impregnated with lime; sometimes in combination with some of the acids, forming neutral salts; but generally with a predominancy of alkali or alkaline earth. The water of this place† (Sackett's Harbour) issues from a bed of limestone, and holds in solution the muriate of lime, which is very injurious to the health of strangers; particularly those who come from

† There are no wells here. A number of persons have been employed by Government to dig a well in the Smith Cantonment, they penetrated upwards of thirty feet, into a solid rock, obtained little or no water, and abandoned the object.

the sea board, (where the waters usually contain an excess of acid,) or from a granite country, or almost any place where limestone does not abound. Lake water is preferable to spring or well water, when taken up at a distance from the shore; but it was usually taken up at the margin of the lake, where it received all the wash and filth of the camp, and consequently, was extremely pernicious to the health of the troops.

Excessive watching and fatigue,—after which, *great indolence*, or a want of that exercise which is necessary “to give tone to the muscular fibres of the body, and to promote the general circulation of the fluids,” and thereby to ward off disease, by preventing sudden impressions and slight changes in the system. Besides the debility of constitution and consequent predisposition to disease, induced by the above mentioned causes, the exhaustion produced by excessive corporeal exertions, loss of sleep, and the depressing passions, probably contributed in no small degree, to predispose the body to, or excite this disease.

PROXIMATE CAUSE.

Excessive local action, producing an inflammation of the membranes and substance of the lungs, and consequent increased secretion.

Of the *diagnosis* and *prognosis* of this disease, I shall say nothing; but pass to the third general division.

III. To this disease various names have been given by different practitioners, and their treatment has been as various as the names they have given it.

Dr. Yates, in his first publication, hesitated to give it a name; but in a subsequent publication observes: "As diseases are generally named from some prominent symptom that characterizes them, I have no hesitation to entitle this, a bilious fever; and from its being Epidemic, the *Bilious Epidemic Fever*."*

Dr. Yates was violently opposed to bleeding, and trusted wholly to emetics and cathartics in the cure of this formidable disease. He invariably commenced with an emetic, which he soon followed by a cathartic, and kept up the constant repetition of emetics and cathartics, until the patient either got better or died. This gentleman observes, in some communication on this subject, (if my recollection serves me,) that he thinks the time not far distant, when the whole practice of physic will be reduced simply to the administration of emetics and cathartics, in the cure of all diseases.†

This complaint was denominated by Dr. Stearns,—"*Typhoid Peripneumonia*, or *Pneumonia Typhoides*."‡ He likewise trusted principally to emetics and cathartics; but gave also diaphoretics and demulcents, combined with opium; and oc-

* Med. Repos. New Series, vol. 1, page 252.

† The paper in which this idea is advanced, I have not now before me.

‡ Medical Repository, vol. 1, page 264. New Series.

casionally used epispastics, after having failed in attempting to relieve the violent pains of the thorax, and difficult respiration, by spirituous fomentations. Both the above named gentlemen considered this a *new disease*.

Dr. Hosack and Dr. Low* adopt the nosological arrangement of Dr. Cullen, and rank it under the genus "*Pneumonia*;" species second, "*Peripneumonix, Idiopathicx complicatx febre*;" and of the variety, "*Peripneumonia Typhoides. S.*"

The former considers it a species of the spotted fever, or rather a modification of that disease, complicated with *local inflammation*, as will appear by the following extract:—"The causes of this disease," says he, "are no less compounded than the disease itself. The local inflammatory affections are probably occasioned by the *sensible* changes of the atmosphere, while the typhoid character of the disease, is derived from *Epidemic constitution* of the air, the same which has given rise to the typhus petechialis or spotted fever, which has prevailed for some time past in our northern and eastern states, and which is, doubtless, the same disease as that now prevailing in Albany; with the exception, that the present Epidemic is complicated with the symptoms of local inflammation of the chest, brain, throat, &c. the effect of the present cold season of the year. With this view of the *mixed* nature of the disease, and of the combined causes which have produced it, we are

* Vide Amer. Med. and Phil. Register, vol. 4, p. 20.

prepared to expect the various and opposite opinions and modes of practice, which have been adopted by different physicians.”*

Dr. John Bard describes a very fatal form of Epidemic disease, bearing some resemblance to the present, under the name of *Malignant Pleurisy*, which prevailed in the town of Huntington on Long-Island, in the year 1749.†

Dr. Mott has given us a minute and learned memoir of a similar Epidemic, which prevailed at *Newton*, Long-Island, in the spring of 1812, which he has denominated a *Malignant Epidemic Peripneumony*.‡

Dr. Williamson has given us some account of a disease which prevailed in North-Carolina; and which is endemical in the southern states, under the name of *Malignant Pleurisy*. He says:—“ When it fell upon the breast, as the pain in many cases was severe, the impropriety of the name is not remarkable; but it falls upon the head nearly as often as it falls upon the breast; and in that region is exceedingly painful. Then too it is called, however improperly, a *Pleurisy of the head*.”

He considers it a similar disease to the one under consideration, though nearly allied to the pe-

* See Med. and Phil. Register, vol. 3, p. 448.

† Med. and Phil. Register, vol. 1.

‡ Med. and Phil. Register, vol. 3, p. 165, et seq.

teachial or spotted fever of New-England ; and endeavours to trace it to the same cause.*

Dr. Pomeroy the medical professor at Burlington College, and many others in different parts of the country, distinguished this disease by the various names of *Epidemic*, *Typhus Epidemic*, and sometimes, *Typhus Fever* ; but more frequently *Spotted Fever*. Many physicians are much in the habit of prescribing for the names, rather than the symptoms of diseases, which may, in some measure, account for the indiscriminate and improper use of stimulants in the disease now before us. It was treated by this class of physicians at Burlington, and through a considerable portion of the country where it prevailed, altogether by stimulants, and generally those of the most active kind. Wine, brandy, and opium, were the grand articles. These were given in any quantity ; even from the commencement of the disease. In many instances, however, they premised an emetic, which if it did not induce delirium, this was soon brought on by the brandy and opium, which succeeded it in very large quantities ; and which usually terminated the short, though miserable existence of the unfortunate patient.

I am by no means tenacious as to the name of this disease, because in a practical point of view, I consider it a matter of very little importance, what name a disease bears, or whether it has *any*,

* Register, vol. 3, p. 454.

provided it is well understood;—if it is not, the name can do very little towards enabling us to comprehend its nature.

“Much mischief has been done by nosological arrangements of diseases.”*—“The truth is, that systematics have misled each other from age to age, without deigning to look at the phenomena of nature, as these arose before them.”†

In giving a description of a disease, in order to prevent confusion, it becomes necessary to designate it by some name or other. I shall, therefore, adopt the name of that disease, to the symptoms of which it bears the strongest resemblance.

It appeared to me to be more nearly allied to the *Pneumonia* of authors, than to any other complaint; and particularly to that species of it, denominated, by Dr. Cullen, *Peripneumonix idio-pathicæ simplices*; and of the variety *Peripneumonix notha*;—but with symptoms of a more aggravated nature.‡ It seized more violently, ran its course more rapidly, and terminated in one of the five following forms; either by resolution, adhesion, effusion, suppuration or gangrene. The inflammation in those who recovered, generally terminated by resolution, and sometimes by effusion or suppuration. Those cases which ended fatally on the first, second, or third day of the disease,

* Rush's Med. Inq. and Obs. vol. 3, p. 20.

† Brown's Elements, Sec. cclxvii. (t.)

‡ Probably owing to local circumstances.

usually terminated by effusion, which perhaps was the most common; and next to that, suppuration, in those cases which terminated after the third day; and sometimes by a commixture of both. The other termination now and then occurred, though less frequently.

IV. The mode of treatment which I found most successful at Burlington, and which I practised in the 9th Regiment of U. S. Infantry, was the following:

If I saw a patient in the incipient stage of the disease, (which, however, was seldom the case,) I usually prescribed pediluvium, and some mild sudorific, which was at the same time a diluent, such as weak balm, sage, or catmint tea. In the hot stage which soon followed, I invariably commenced by bleeding, and repeated the operation according to the force and frequency of the pulse, the state of the tongue, and other symptoms. In the majority of cases, I bled copiously, say, from sixteen to thirty-two ounces. In one or two instances, particularly the case aforementioned, I drew thirty-six ounces at a bleeding, two days in succession;—sixteen in the evening of one of those days, and from thirty-two to thirty-six, at two bleedings the next day; and about sixteen each day, for two days following; and the same quantity at two subsequent bleedings;—making in all, nine bleedings.

Dr. Rush says: "Blood-letting should always be copious where there is danger from sudden and

great congestion, or inflammation in vital parts.”* This was my anchor of hope in all cases ; and it was this particularly, which I depended on more than any one thing.—“ By making use of blood-letting in fevers, we are not precluded from the benefits of other evacuating remedies. Some of them are rendered more certain, and more effectual by it ; and there are cases of fever in which the combined, or successive application of them all is barely sufficient to save life.

To rely upon any one evacuating remedy, to the exclusion of the others, is like trusting to a pair of oars in a sea voyage, instead of spreading every sail of a ship.”†

In many cases, bleeding was required oftener, but not so copiously as in the one above. I have practised venesection from one to three times a day, with the happiest effect ;—taking from twelve to twenty ounces each time, during the first three days of the disease. There were some cases, that would not bear copious bleeding, but required the frequent repetition of that operation. It was those peculiar cases, where there was a small oppressed pulse, which would usually rise on opening a vein.‡ This is called by Dr. Rush, the *synochula* state of fever.§

* Med. Inq. and Obs. Vol. 4, p. 205.

† Med. Inq. and Obs. Vol. 4, p. 195.

‡ Med. Inq. and Obs. Vol. 4, p. 196.—Pringle, p. 160.—Thomas's Practice,

p. 37.

§ Med. Inq. and Obs. Vol. 3, p. 26.

Next to blood-letting, I would rank the submur. hydrar. I however, seldom gave it alone and uncombined, but in large doses with jalap, or with equal parts of jalap and aloes, in the form of a pill, sometimes with the addition of 1-4 gr. tart. antim. to 3 gr. of the admixture.

Drastic and particularly mercurial purges were essentially necessary at the commencement of the paroxysm ; and were used to the best advantage, immediately after bleeding. When the action was somewhat reduced, milder cathartics answered the purpose, such as the oleum ricini, or some of the neutral salts, as the sulphas and phosphas sodæ. In the more aggravated cases, however, I not only gave mercurial cathartics, but calomel also in small doses, sometimes combined with ipecac. and opium.

Expectorants and sudorifics, were useful auxiliaries ; and when there was much coldness of the extremities, semicupium was an important agent towards equalizing the action of the system. Universal hot bath was prejudicial ;—tepid bathing was preferable, though not very beneficial. Where severe pains in the thorax, did not readily yield to bleeding, and to the other remedies, epispastics were indispensably necessary.

All fermented and spiritous liquors, and all food directly stimulating to the system, were interdicted until the convalescent stage of the disease. The food consisted principally of decoctions of

barley, rice, and the farinaceous substances in general.* Cold air† was freely admitted into the room. Copious draughts of cold water,‡ and other cold drinks were used, and in short, the whole antiphlogistic regimen rigidly pursued.

This, sir, was my usual routine, from which there was no considerable variation in any case; and for the propriety of which I can only urge the success of the practice.

I cannot accurately state how many cases occurred in the 9th Infantry, but of all those which did occur after I joined the regiment in December, I lost but *one*; and but two or three other deaths took place during the continuance of that regiment at Burlington,—which was until the 24th of March, 1813.

The case above alluded to was not necessarily fatal, but probably as much under the controul of medicine as any other of equal violence. The subject of it, from the dread of the potent remedies, to which he had seen his comrades subjected, and which he himself anticipated, was deterred from making application until the fourth day of the disease. It was then too late—the inflammatory stage had run through—depletion was impracticable. Blisters were applied, and an emetic administered, but without effect—stimulants were unavailing—the extremities were cold—face and

* Fordyce on Fever. Third Dissert. part 1, p. 184.

† Rees's Cyclopedia, article, cold.

‡ Hoffmani Opera, vol. 1, p. 499.—Celsus de Medicinæ, lib. iii. cap. 7.—Currie's Med. Rep. vol. 1, chap. xi.

lips had become of a dark purple colour—and the respiration was so difficult, as to amount almost to suffocation, from an inability in the lungs to perform their office. The patient died on the sixth day, after severe suffering, as was usual in such cases. Four hours after death, I examined the body, in the presence of several officers of the Medical Staff. The appearances on dissection were as follows:

A very copious effusion, together with an extensive suppuration of the lungs had taken place; adhesions of the pleura costalis, with the pleura pulmonalis, had also taken place, and large abscesses formed in the right lobe of the lungs, so as almost wholly to destroy its action. I have observed similar appearances in other cases, where I have had an opportunity of examining them. Abscesses were frequently so extensive, as almost wholly to destroy the substance of the lungs. Sometimes one or both lobes would be turgid with blood; the sanguiferous vessels of the lungs being forcibly injected with black blood from the heart.

In some instances, I have noticed one lobe to be wholly, or both partially collapsed, contracted, and shrunk, without air in their cells; which leads to the conclusion that one lobe at least, or a part of both, may cease to act for some time before death.

In the case abovementioned, there was also some affection of the liver. The subject of it was of an intemperate habit, and his disease was ex-

cited by exposure to a cold and damp atmosphere, while in a state of inebriation.

It was an observation of Dr. Mann, which I think worthy of remark, that the intemperate were the first who were attacked, and the first swept off by this destructive malady; and he might have added, that the intemperate would have best borne, and most required extensive depletion.

The appearances on dissection, (aside from the symptoms,) clearly proved, that the disease was highly inflammatory. This I think, must have been obvious to the understanding of every one, possessing the least knowledge of morbid anatomy, who would take the trouble to examine for himself. And yet how astonishing it is, while six or eight valuable soldiers were dying daily at the post of Burlington, that the stimulating practice should have been pursued.

ant, yet it is productive of no lasting bad effects. This instance may have arisen from an accidental activity of the absorbent system, consequent to a previous abstinence undertaken in order to promote the operation of the remedy.

In concluding this subject, I may add, that in the account of the plague as it occurred at Malta, given by Sir B. Faulkner, of three cases of recovery from that disease there detailed, two of them arose from the accidental ingestion of an immense dose of this substance combined with camphor.

II.

ART. I. *Memoires sur la Fievre Jaune consideree, dans sa Nature et dans ses Rapports avec ces Gouvernements.* Par N. V. A. GERARDIN (de Nancy.) pp. 91. Paris, 1820.

ART. II.—*Considerations sur la Fievre Jaune.* Par le Baron LARREY, &c. &c. Seconde Edition. pp. 42. Paris, chez Compeu, jeune. 1822.

ART. III.—*Rapport presente a son Excellence le Ministre Secretaire d'Etat au Department de l'Interieur, par la Commission Medicale envoyee a Barcelone.*—(Journal Generale de Medicine, Mars 1822.)

ART. IV.—*Manifeste touchant l' Origine et la Propagation de la Maladie qui a regne a Barcelone, en l'annee 1821 ; presente a l'auguste Congres Nationale, par une reunion Libre de Medecins etrangers et nationaux.* Traduit de l'Espagnol, par J. A. ROCHOUX. pp. 35. Paris, chez Bechet, jeune. 1822.

(From the London Medical and Physical Journal.)

We have been induced, thus early in our career, to undertake the consideration of the subject of Yellow Fever, partly from a conviction of its great importance at this moment,* and partly, also, in consequence of a promise which our predecessor has held out in a recent Number of this Journal, and which promise we were most anxious to fulfil. We approach the discussion with a deep sense of its difficulties, and, we hope, unbiassed by any particular theory. Recent circumstances have rendered it of such intense interest, and conflicting opinions have so obscured it, that, although we may hope to be pardoned if we fail to produce order out of this chaos, we should certainly have deserved reprehension if we had shrunk from making the attempt.

Some questions alike interesting to the statesman and the philosopher, are involved in the inquiry concerning yellow fe-

* The public prints inform us that this disease has again made its appearance in Barcelona.

ver; and upon the decision of one of these questions at least, the propriety or necessity of imposing severe and irksome restraints upon a numerous class of the community entirely depends. This circumstance, which greatly enhances the value of the discussion, at the same time increases the difficulty; since the evidence that relates to this particular point is by far the most contradictory that offers itself to our notice.

The points to be resolved appear to be principally the three following:—1st. Is the disease that has of late years devastated Cadiz, Malaga, &c., and more recently committed such frightful ravages at Barcelona, the true yellow fever, or not? 2dly. Is it an imported malady? And 3dly, (which appears to be in some measure, but not entirely, dependent upon the decision of the former question,) Is it contagious, in the common acceptance of that word?—for the disease *might* have been contagious independently of any importation: neither does it appear to us that this latter circumstance, if proved, would be decisive of its character.

Before we introduce the works that stand at the head of this article to the notice of our readers, it may not be amiss to give a rapid sketch of the history and symptoms of the yellow fever of the West Indies and America, a subject illustrated by the labours of so many celebrated men, both English and foreign; and it is not a little mortifying to the pride of human learning to observe how few facts have been established, beyond the reach of contradiction, by the exertions of such an host of writers: yet, when we reflect upon the prejudices of education and of country,—when we consider how many enter into the inquiry with opinions already formed, and with the mental eye closed to every circumstance that tends to weaken their pre-conceived notions,—our wonder ceases, and we can only repose in the humble hope that *we*, who are so sensible of *their* errors, may happily avoid falling into the same mistake.

There can scarcely be found a more apposite illustration of the above remark, than the great variety of names that have been applied to denote this disease,—some imposed upon it in order to distinguish its supposed source or origin, as *the malady of Siam, the Butam fever, &c.*; others from a leading symptom, as *the black vomit, or vomito prieto* of the Spaniards; others, again, from its supposed seat, as *la fièvre gastro-adyynamique* of PINEL; or, lastly, to suit some nosological arrangement, as SAUVAGES, who designates it *typhus icterodes*.

In tracing the history of yellow fever, it is curious to observe how very conspicuous a place the doctrine of importation will be found to occupy; and that attempts have been made, as car-

ly as the year 1690, to fix the origin of the disease upon the East Indies; but the argument in this instance is so well known to be contradicted by established facts, and the prior existence of yellow fever in the Brazils, at Martinique, St. Domingo, &c. is so amply proved, that it will not be necessary to recur to any authority to establish this point: indeed two of the authors who tell the story of the importation by the *Oriflamme* in 1690, give a different version of it; and, as there exists an accurate description of the fever that desolated the Brazils some years prior to this supposed event, and which description can leave no doubt as to the disease having been really the yellow fever, we may be excused from any further research relative to this particular point. Since the date of the above story, a formidable list of authors, upwards of an hundred in number, may be found, who have successively laboured in this field, independently of the numberless essays and papers that have from time to time been inserted in the Transactions of the various learned Societies in Europe and America; some of them describing the disease generally; others, and by far the greater number, deriving their information, and giving their description, from some particular spot, or relating to the epidemic of a particular season; to which circumstance may be attributed the discrepancies that are to be found in the several accounts of the symptoms and progress of the disease.

The following is a brief sketch of the usual mode in which yellow fever makes its attack. Its first accession is denoted by cold chills or rigors, soon succeeded by intense heat and dryness of the surface of the body;* the face is red and flushed; the eyes have a peculiar and fiery expression, which has been compared to those of a man in a state of intoxication; violent pains are felt in the forehead and orbits, sometimes more particularly in the back and lumbar region; the countenance sometimes exhibits a remarkable expression of alarm; the tongue, at first moist, soon becomes loaded; the patient complains of nausea and tenderness in the epigastrium; troublesome eructations and vomitings of bilious matter quickly succeed, which, as the disease advances, becomes of a darker colour; the thirst is extremely great; restlessness and watchfulness distress the sufferer to a great degree: and this stage of the disease often lasts as long as two, or even three, days. The condition of the bowels

* Humboldt tells a story of a traveller, who had passed a very short time at Vera Cruz, and, on his arrival at Xalapa, was told by his Indian barber that he would have the black vomit that evening; giving as a reason that the soap dried upon his face as fast as he applied it.

differs very much : in some instances, constipation exists to a very remarkable extent. One of the distinctive marks of the complaint, mentioned by Mr. Bally, is the length of time that the energy of the muscular power is sustained, so that a person shall be able to walk the street, or shave himself, within an hour of his death. At the termination of this stage, the more prominent symptoms, in general, remit : the patient and his friends are induced to believe that he has overcome the malady ; but the listless and often torpid state of the patient, and a faint yellowish appearance about the chin, or on the sclerotic coat of the eye, too surely point out the danger that is lurking beneath this apparent calm. Dr. Bancroft observes as an alarming symptom in this stage of the complaint, that pressure made upon the region of the stomach will occasionally produce efforts to vomit ; although the pulse shall have diminished in frequency, the thirst and febrile heat shall have subsided ; and even the intellects, if previously disturbed, shall have become clear. This, which may be called the second period of the disease, seldom lasts above two days, and is succeeded by renewed vomitings : the matter thrown up is streaked, or altogether black ; passive hemorrhages from the mouth, anus, &c. supervene ; the teeth and gums are covered with a black crust ; the dejections become bloody, of a most offensive kind, and often involuntary ; the urine is dark coloured, fœtid, and in very small quantity ; petechiæ occasionally appear over the whole body, some hours previous to death. Swellings of the parotids, and of the axillary glands, are mentioned by some authors, but they do not seem to be essential to the disease : they were, however, met with frequently at Martinique, in 1802 and 1803. The state of the intellects is by no means uniform ; sometimes coma prevails ; in other epidemic seasons, furious delirium has been more prevalent. The whole duration of the malady is from five to seven days, although many instances occur where death ensues within thirty-six or even twenty-four hours. The state of the pulse is represented as very variable. Dr. Gordon says that, at the commencement of the re-action, it is full and strong, but seldom exceeding ninety strokes in the minute. Dr. Bancroft represents it as quick, though sometimes oppressed and irregular. At the end of the first twenty-four hours it increases in frequency.

It appears, by the concurrent testimony of some of the best writers, that yellow fever attacks the system most commonly between midnight and noon.

So much do these epidemics vary in their leading symptoms, that, in 1814, it is said that the black vomit was a rare occur-

rence. At Philadelphia, in 1798, the delirium was generally of a violent character. In some instances, a miliary eruption has made its appearance in the latter stage of the malady; and even the yellow suffusion is not always met with. Examination of the dead body presents more points of difference than would at first sight be expected; and authors by no means agree in their accounts of the diseased appearances. These disagreements may, perhaps, be ascribed to the greater or less degree of severity of individual cases, or to variations in the epidemic constitution (to use an antiquated phrase,) of some particular seasons. Thus, whilst Bancroft declares that the brain has appeared to him more voluminous than natural, Mr. Bally has found it compressed by a red and bloody looking serum; and Savaresi says that it is, in general, reduced to five-sixths of its usual volume. In some seasons, the lungs have been found affected, and the pleura inflamed; but the abdomen is the principal seat of the morbid changes, though even here we find a great contrariety of sentiment. Dr. Gordon has found the biliary organs frequently in a state of lesion; others have observed that the liver and gall-bladder remain in a healthy state, even where the stomach is loaded with the matter of black vomit. Gerardin has often seen the hepatic system unaltered; whereas Rochoux protests that there is no example of the gall-bladder remaining in a healthy state. It is admitted that the spleen and kidneys are generally sound; yet Savaresi observed, at Martinique, in 1803, and 1804, that they were constantly affected. The mucous surface of the stomach and small intestines bears, however, the most unequivocal and universal marks of lesion, according to the unanimous testimony of all the best writers. Red and gangrenous spots are found scattered over their whole surface, and finally, Dr. Audouard informs us that, in numerous instances, the spinal canal contains a quantity of serous fluid.

We will not fatigue or insult our readers by quoting authorities to prove that yellow fever is indigenous in the New World; that it is of local origin, and can be fairly traced to the extrication of marsh effluvia, reigning sporadically, in a greater or less degree, among Europeans and new settlers; whilst the natives and the black population, excepting in particular seasons, escape with impunity, or, at most, only suffer partially and occasionally from slight remittent or intermittent fever. We are still, however, in darkness with respect to the causes which sometimes give vigour and activity to this poison at one period more than another, and which, after a few years' quiescence, render these climates so formidable to the inhabitants of our quarter of the

globe ; particularly hot seasons,—the fall of an unusual quantity of rain,—the direction of the winds,—the absence or presence of hurricanes, and other atmospheric phenomena, would probably, if duly registered and known, solve the difficulty. But this is a subject standing in need of much illustration, and the study of which we strongly recommend to those whose destiny carries them to these climates.

A careful inquiry into the topography of the different islands and places where the disease is to be met with, is also a great desideratum ; although, since the year 1793, many important facts relative to this point have been noticed, both by English and foreign writers. It is a pursuit of the highest importance, because it leads at once to the only remedies that can prevent a recurrence of the dreadful scenes that have been too common both in America and its islands ; and which remedies, it has been, we think, satisfactorily shown, consist in ventilation, drainage, and cultivation. That, from the year 1793, in particular, such frightful mortalities should have occurred in St. Domingo and other of the Antilles, is not a subject of astonishment, when we consider the thousands of victims, in the fittest state to receive the disease, which the course of a sanguinary war poured out to these colonies.

We may now fairly proceed to examine the authorities on the much-disputed subject of contagion, which we shall do as briefly as possible, and then turn our attention to the disease which has appeared so frequently, of late years, on the coast of Spain and Italy ; which will conduct us to the question of importation, and to its application to the recent case of Barcelona in particular.

Several opinions appear to have been prevalent relative to the contagious character of yellow fever, by which term we understand a direct communication with the sick, or with the clothes, bedding, &c. of persons labouring under the disease. One of these opinions is, that it is contagious ; another, that it is not ; and a third and respectable portion, both as to reputation and numbers, hold a middle course, and believe that it is sometimes contagious and sometimes not so ; whilst others, refining still farther, believe that, though not originally capable of communication, it may, under certain circumstances, become so, or that the contagious property has but an extremely limited operation in point of time as well as space. Among the contagionists are to be found the names of Lind, Lining, M'Kettrick, Batty, Chisholm, Pallone, Arejula, Pym, &c. The non-contagionists produce the names of Jackson, Moseley, Bancroft, Watts, Miller, Revere, M'Lean, Valentin, Savaresi, Deveze,

Caldwell, Ferguson, &c. The partizans of the mixed opinion number among them Humboldt, Desgenettes, M. de St. Mery, M. de Jonnes, (not a medical man,) Clark : Baron Larrey and Gerardin must be also classed in this list.

With respect to Mr. Rochoux, we know not what to say ; he seems to have changed his opinion so often, that it may fairly be doubted whether he has made up his mind as to which side of the question he finally intends to espouse. It is more than suspected that Dr. Rush, although he had formally abjured his belief in contagion, retained a strong predilection for that doctrine to his last hour.

In the very outset of the argument, it will be perceived that the non-contagionists have a manifest advantage over their antagonists, because one well-authenticated fact of non-contagion is, from its nature, of more value, than scores of cases of contagion as usually adduced ; for, as these latter necessarily take place upon the spot which is the alleged source and origin of the noxious effluvia,—the very cradle of the disease, twenty men may successively fall ill from breathing the same atmosphere, without its being at all necessary to suppose they derived it from each other : nor does the exemption of secluded houses and families, even if the facts are admitted in their fullest extent, entirely clear up the difficulty ; since it is well known that, in other cases of marsh fever, and upon sundry other occasions, the slightest difference of situation,—the interposition of a wall or dyke,—has been quite sufficient to preserve the atmosphere from contamination. In Walcheren, this was exemplified in numerous instances, especially at Fort Batz, where the troops suffered little or no sickness ; whereas, those stationed without the fort, though only at a very short distance, were affected by the fever to a most alarming extent and degree. But what shall we say to the instance of New-York, in 1805, where a population of more than 10,000 persons, dreading the effects of contagion, fled from the town, and encamping at Greenwich, an elevated field at one extremity of the town, established their stores, banking houses, &c. on that spot, and where, finally, the customs and the courts of justice were transferred,—notwithstanding the constant intercourse between Greenwich and New-York—notwithstanding the importation of goods of all sorts, and touched and handled by all classes of people,—the disease did not spread in any one instance. Equally strong is the case of Leghorn, in 1804, when those who fled to Pisa did not communicate the fever ; and, although two of those who removed there actually died of unequivocal yellow fever, no farther sickness took place. The same thing is recorded to have happened at Gibraltar, in 1814, by Mr. Amiel.

Mr. Valentin has adduced numerous authorities, all concurring to establish the non-contagious nature of the disease. Dr. Dupuy, who witnessed both the epidemics of New Orleans, of 1819 and 1820, not only is of this opinion, but declares that all the practitioners, with the exception of two or three, agree in this point. In contradiction to Dr. Gerardin's implied meaning, he says, that those who fled from the city to other parts did not communicate the complaint to the inhabitants of those places to which they fled. The mortality of the epidemic of 1820, in particular, was so dreadful, that, of those attacked by it, seven out of ten died.

It appears, also, that Dr. Chervin, then at New Orleans, had, after witnessing the ravages of yellow fever at Guadaloupe, and actually examining more than four hundred dead bodies, made a tour to the Antilles, and to many parts of the United States of America, in order to collect the opinions of the profession upon the subject of contagion: the result is, that, out of about one hundred and fifty certificates which he obtained, there were not above fifteen who adhered to that doctrine. Dr. Chervin is now at Paris, preparing his materials for publication again. A committee of seven physicians was appointed to examine into the causes of the epidemic at Mobile, (Florida): their opinion as to its local origin is unanimous, and most satisfactory. Such also is the result of the researches of Dr. Chalard, of Baltimore.

Several other analogous authorities are adduced by this able and zealous writer; but it is useless, we conceive, to accumulate farther evidence, which can only tend to swell this article, and tire the patience of the reader. As a specimen, however, of the credulity of the contagionists, we may here mention a fact brought forward by Dr. Pym, and which, we think, can only excite a smile. He states that a man of De Rolle's regiment, in leading a comrade affected with the fever, at Gibraltar, to the hospital, turned sick, and expired on the road; and this is adduced as a proof of contagion. A much stronger circumstance is related by Baron Larrey: it is this:—Dr. Valli, a few days after his arrival at the Havanna, took off the shirt of a sailor who had died of yellow fever, rubbed his own body with it, then put it on, and went to dinner with his host, Don Gonzalez. He remained quite well the next day; but, on the day following, he was taken ill, and died in twenty-four hours. Now this *appears* quite convincing: yet, when we consider that Dr. Valli was just arrived from Europe, and that yellow fever existed at the time, much of the force of the above case is destroyed; and it remains at best but very equivocal evidence. Gerardin also tells us that yellow fever raged at Natchez, Baton Rouge, and

other places, at the time of the epidemic of New Orleans in 1820 ; although some of these places, the former in particular, is remarkable for the healthiness of its situation, and is distant 150 miles from the source of the malady : but he admits that all these places were crowded with those who fled from New Orleans ; and he does not inform us whether the disease was confined to these refugees, or whether the untravelled and original inhabitants suffered by the arrival of the strangers. This is, indeed, evidently implied in the account, and is in consonance with his own belief and opinion, but he has left the matter in great doubt.

It would be injustice, in this place, wholly to pass over the strong facts and arguments adduced by Dr. Ferguson, in corroboration of what has been stated above, but it will be sufficient for our purpose to notice two or three of the most striking illustrations he has given us in support of the non-contagious nature of yellow fever, without entering into the merits of his opinions upon other points of the argument. The first of these facts is the exemption which all the inhabitants of Monk's-Hill Barracks, Antigua, enjoyed during the epidemic of 1816, whose duty did not oblige them to sleep out of that garrison ; whereas the soldiers who mounted guard at the dock-yard, and in other low situations, were often seized, while on their posts, with the most aggravated form of the disease ; many dying within thirty hours from the first attack. Another important observation goes to prove that a slight elevation in the immediate vicinity of a marsh is more fatal sometimes than the ground upon a level with it, the higher ground appearing to attract the effluvia. This is in conformity with our own experience in the case of intermittent fever in many situations in this country.

The neighbourhood of trees is also observed by this author, to afford a protection from the poisonous effects of marsh effluvia ; and he gives us the example of New Amsterdam, where fever does not prevail, although it is situated within a stone's throw of a most unwholesome swamp, with a strong trade-wind blowing day and night from it towards the town, and without any other protection than this screen of trees : yet it is found that sleeping under them, or remaining there after sun-set, is almost certain death to any European. It may be added, that the inhabitants are well aware that their exemption from fever is owing solely to this cause.

Upon the whole then, the conviction upon our minds arising from all we have read and thought upon this subject, is, that yellow fever is not a contagious disease ; that it is of local origin : that it exerts its energy principally during night, at which

time a very transient and temporary exposure to its causes is sufficient to light up the flame in a habit predisposed to receive it; and that although, from causes yet unknown, it acquires such fatal activity at some particular seasons, it is always to be met with as a sporadic affection in those climates, and, if we may believe some authors, even at our own doors.* Notwithstanding all these articles of faith, we are, however, willing to admit that the conviction entertained by some very judicious practitioners, that, although not originally or necessarily contagious, yellow fever may, and does, occasionally become so, is not to be altogether despised; since there does not appear any thing unreasonable in the supposition, that crowded habitations, poverty of living, and personal uncleanness, (to say nothing of moral causes,) may so concentrate and condense the poisonous effluvia as to superadd a contagious property to a disease originally free from it. We do not *know* this to be the case; but some circumstances within our own recollection, occurring to certain portions of the peninsular army, as well as consequent upon the unfortunate expedition to Walcheren, give some colour to this argument, and lead us to suspect the existence of what an able contemporary has denominated *contingent* contagion. The subject is confessedly one of great difficulty; but it is not a mere question of the schools, since upon the belief of contagious diseases depends the propriety of imprisoning a whole population: and we cannot but think it to be abundantly proved that both humanity and policy are equally outraged by the adoption of measures of such extreme and useless rigour. If, as, in the case of New-York, the *healthy* population were removed out of the sphere of the malady, which we *know* to be of local origin, we conceive that a stop would at once be put to the spreading of the evil; whereas the removal of the *sick* tends merely to increase the alarm, and leaves only a succession of victims to be swept off, as long as the influence of the miasmata remains in activity. Still more cruel is the close circumvallation of the whole population, which, after all, cannot be so complete as to baffle the courage and ingenuity which the dread of so formidable a disease will frequently inspire.

Before we proceed to the direct question of importation, there are a few interesting facts which must be mentioned, and from which it would appear that a disease similar to yellow fever in all its leading symptoms, and unfortunately also in its fatality, has, upon certain occasions, been produced on board ship, with-

* Valentin says that sporadic cases are met with at Brest occasionally

out the most remote possibility of supposing it to have been exported from any of the known sources of that malady. The most remarkable of these events is recorded by M. Beguerie, who has seen the yellow fever in the West Indies, and experienced an attack of it in his own person. It appears from his account that a French flotilla, with troops on board, which sailed from Tarentum for St. Domingo in 1802, after having been driven about the Mediterranean by stress of weather, and having been obliged successively to put into the ports of Leghorn and Carthage, sailed from this latter place in the month of August. The heat of the weather had been dreadful in the months of May, June and July; the provisions on board are represented as of the worst quality, and the salt fish in such a state of putrefaction, and giving out so horrible a stench as to oblige them to have it thrown overboard. A fever broke out on board this fleet soon after they sailed, and lasted until their disembarkation, acquiring force as they approached the tropic. M. Beguerie assures us that the symptoms of this fever differed only from those of yellow fever *by an almost imperceptible shade*.

In the month of August, 1802, an American vessel arrived at Marseilles from New Providence, after having touched at two Spanish ports. No epidemic reigned at either of these places; neither had she any sick on board during the passage, nor during a quarantine of fourteen days; but, after the crew had disembarked, the second and third officers and four sailors were successively attacked with yellow fever, and died; three in different houses in the town, and three at the lazaretto; but it did not spread either among the inhabitants, or to the physicians and attendants of the sick. The writer of this article (M. Fournier) is therefore induced to believe that, in this instance, the vessel must be compared to a spot where the air is hot, moist, and stagnant, and rendered impure from many sources of corruption.

One more very strong instance of the development of yellow fever on board ship, is recorded by Dr. Ferguson: it is the case of the *Regalia*, transport, which was employed in bringing black recruits from the coast of Africa to the West Indies, in 1815. This vessel is represented as leaky, and having taken on board a quantity of green wood in Africa; her ballast also was foul, and had not been changed from her quitting England, nor for any discoverable time previously. The black recruits were crowded in this vessel, many of them afflicted with fluxes, ulcers, &c. The provisions were defective, both as to quantity

and quality; and the crew, prior to their sailing from Africa, were healthy. It appears authenticated that this ship arrived at Barbadoes with yellow fever on board, in the month of August: that, owing to some negligence, she was not put under quarantine, but communicated freely with the Saints, Antigua, and Guadaloupe, landing those dying of the disease among the inhabitants and at the hospitals of those places, without communicating the disease at either of them; and, finally, after having undergone a thorough purification, sailing from Guadaloupe to Europe, crowded with French prisoners and their families from the jails, under the most dangerous circumstances of health, with a case of yellow fever dying on board the day before she left Basseterre Roads; but without any contagion spreading to the other passengers, and without importing it at the port which she ultimately reached.

Dr. Lefort, of Martinique, in a letter to M. Valentin, states that the yellow fever broke out spontaneously on board a vessel called the *Euryalus*, cruising in the tropical seas, without having touched at any port in those seas; and this he declares to be the fifth instance of the kind, within his own knowledge, in a period of four years.

M. Moreau de St. Mery adduces the following fact as an unanswerable argument in favour of contagion: we do not see it in that light; however we are bound in candour to relate it. The *Paleniscus*, a French brig, having the yellow fever on board, and cruising in the West Indies, encountered the English brig *Carnation*, coming direct from Europe, the crew quite healthy. A combat ensued, and the English brig was captured (a rare occurrence,) by boarding: the English sailors were consequently removed as prisoners into the French ship, and took the disease. Now, we think this and other examples quoted above will enable us to clear up this difficulty, without the necessity of recurring to contagion; for, if the French vessel was the focus of the yellow fever in this last instance, she would stand, in relation to the English sailors, exactly as a village or town surrounded by a contaminated atmosphere would stand with respect to its inhabitants, or to strangers arriving there from other quarters: but if, on the contrary, a French sailor labouring under the yellow fever had been sent on board the English ship, and the disease had spread amongst the healthy crew, we should then be under the necessity of admitting that a case of contagion had been made out, beyond the reach of cavil or dispute.

A late Number of a foreign periodical work, contains an account of a sickness occurring on board a vessel called the *Ar-*

thur, which sailed from Rouen in 1818, laden with *poudrette*, a species of compost made from human ordure. On the voyage to the West Indies, a disease broke out among the crew, of so alarming a nature, that one half died on the passage, and the rest arrived at their destination in a miserable state of health. Those who unloaded the vessel suffered equally from the same disease. M. Parent, who was deputed by the French government to trace the cause of this accident, discovered that a similar fate had attended the crew of a little bark laden with the same material at Nantes; although the workmen, who prepare the article upon a very large scale, and who perform the process in the *open air*, are found to be remarkably healthy. The nature of the disease produced in both these instances was a fever of that type called by the French *fièvre adynamique*, the most prominent symptoms being head-ach, pains in the limbs, fever, nausea, and vomiting. It is not stated whether any of the crew of the last named vessel died; nor do either of these instances go the whole length of proving that the malady produced was actually the yellow fever; but they establish this fact, that the putrefaction of animal and vegetable matter, aided by warmth and moisture, is capable of producing a disease resembling yellow fever in some of its most prominent features, as well as in its ratio of mortality.

From a due consideration of the foregoing facts, and many others equally strong, resting on authorities the most respectable and undoubted, we do not perceive any thing paradoxical in the assertion, that, whilst we believe yellow fever to be in its nature non-contagious, we are clearly of opinion that it may be, and often has been, imported. That it has ever spread by importation, or that the mortalities that have occurred so frequently in the New World, as well as in Europe, are to be ascribed to this source, we most positively deny; but, when, from a concurrence of local causes, an epidemic has broken out, and it becomes an object to trace it to some palpable and known origin, can we be surprised that it should be discovered to have existed on board some ship from the West Indies, or that it should have developed itself on board some vessel during her passage? In fact, numerous examples of the sort are upon record; but does this circumstance establish a necessary connexion between the disease on board and the epidemic on shore? We think decidedly not; for repeated experience has shown, that men brought from on ship-board, and dying of yellow fever at different houses, have not spread the disease to any single individual; and again, epidemics have sometimes raged, of the importation of which not only no evidence is offered, but not

even any suspicion existed. The shores of the Mediterranean have enjoyed an exemption from this calamity for many successive years. Is it reasonable to suppose that, in all that time, the quarantine laws have never been violated or evaded, when such instances are discovered to be of every day occurrence, when they are wanted to be brought forward as evidence of the foreign origin of the complaint? But, in truth, such inquiries have never been thought of until the breaking out of the fever has given rise to them; and, when instituted, if a solitary case of yellow fever has been traced to have occurred within a short period of the invasion of the malady, the problem has been considered as solved, and all collateral and minor evidence tortured to meet this explanation. But, if we believe that, in any one well attested instance, yellow fever has been traced from a West Indian or American vessel without communicating contagion, the argument in favour of that doctrine is at an end, and importation may still be credited without considering contagion as a necessary consequence.

The course of our narrative has now brought us to the consideration of those frightful scenes which have occasionally been exhibited on the shores of Italy and Spain, but which have, since the year 1800, been not only of more frequent occurrence, but more fatal in their results. That Cadiz, Carthagena, and Malaga, have been visited three or four times in the course of the eighteenth century by destructive epidemics, and that these epidemics were really the yellow fever, there can be no manner of doubt. The writings of contemporary authors are conclusive upon this point, and Lind was himself a witness to one of these visitations. The more recent occurrences at Cadiz and Gibraltar have given birth to such numerous testimonies of the most respectable kind, that there can be no hesitation in asserting that the first of our questions is satisfactorily answered in the affirmative; and nothing now remains for us but to examine the documents that relate to the fever at Barcelona in 1821, and the only point of accordant that can be discovered between the various individuals who have so zealously devoted themselves to the contemplation of this malady, is the undoubted fact of its having been the yellow fever.

We shall now, without farther comment, proceed—1st, to lay before our readers, as succinctly as we are able, the substance of the Report made by the French commissioners to their government relative to this epidemic, as bearing the stamp of authority; and afterwards present them with a Manifesto, published by the spontaneous union of several physicians, both English, French, and Spanish, in Barcelona, and which is, in fact, a

direct contradiction to all the assertions contained in that report, without having been originally intended as such ; since, at the time of its publication, the report of the French commissioners was not known at Barcelona. In the course of this analysis, all the facts connected with this melancholy visitation of Providence will become developed ; and the conclusions which we think must inevitably result, will tend, in a very satisfactory manner, to confirm the opinions attempted to be maintained in the former part of this paper.

With regard to the report of the French commission, it is but cold language to say that it is one of the most extraordinary documents ever presented to public notice ; it would, perhaps, not be too harsh to affirm that it is also the feeblest in reasoning,—the weakest in fact, and the strongest in assertion, that ever issued from the press. It bears the most decided marks of preconceived opinions, but is, fortunately, so hastily and crudely put together as to carry the conviction of its weakness in every page : in short, it displays a determination to discover, what we are persuaded it was intended to find, an excuse for a sanitary cordon. The gentlemen composing this commission were originally five in number,—namely, Messrs. Bally, Francois, Pariset, Mazet, and Rochoux ; the whole of them, with the exception of the last, most decided contagionists,—a circumstance which alone will afford a tolerable guess at the impartiality that may be expected from an inquiry conducted by such a junta. Their personal narrative is shortly thus : they quitted Paris on the 28th of September, and arrived at Barcelona on the 9th of October, at seven o'clock in the evening ; and, by half past eight, they had begun their labours, and visited some sick.

As the commission was so soon to be freed from the presence of M. Rochoux, we shall dismiss him at once, giving the motives of his secession as represented to us by his companions, and which, if correct, is ludicrous enough. He escaped by a piece of logic. “ The fever that rages at Barcelona,” he said, (we quote the words of the remaining commissioners,) “ is either the yellow fever of the Antilles, or it is not : if it is, it has no contagious property, as we shall see ; but, if the disease has any thing contagious in its nature, I am not sent here to study a malady of that kind, and therefore I shall separate myself from you immediately.” In consequence of this opinion, they assert that M. Rochoux retired to Garcia on the 14th, and, after divers projects, separated himself entirely from his comrades. They more than insinuate, that M. Rochoux was induced to adopt this line of conduct in consequence of the death of M. Mazet, which took place on the 22d instant, after an illness of nine

days : he was taken ill in the night between the 12th and 13th, having only seen and touched two sick persons. It is, however, but justice to M. Rochoux to observe, that, as the commissioners have been detected in perverting the truth with respect to another of their countrymen, (who indeed, has proved the fact against them in the most unanswerable manner,) we are therefore bound to give that gentleman the benefit of the doubts which such unfair and illiberal conduct has necessarily excited in our mind.

The commissioners then continue their narrative as follows : Dr. Audouard, who was sent to Barcelona by the minister of war, arrived there the day after M. Mazet's death ; but he did not join them, he established himself at the botanic garden. They declare that they met him but seldom ; that he was accustomed to work independently of them ; which, joined to the sickness of two of their number, separated them from each other, without, however, causing any division between them. Their history then concludes with some account of the mode of conducting their researches. In the night of the 24th, Messrs. Bally and Pariset were attacked with the disease : M. Bally suffered most. During their secession, M. Francois continued his visits, and made the first *examinations of dead bodies* ; for, until then, they had no instruments. An assistant fortunately came from Perpignan, a M. Jouarii, "poor, but full of zeal." Morning and evening he attended the visits of M. Francois, and in the day wrote what was dictated to him by M. Bally. This latter gentleman, when enabled to go about, employed him especially in anatomical examinations. From the 6th to the 19th of November, M. Bally resumed his duties at the hospital, and between these dates the clinical observations and dissections are represented as having been more regular and complete. On the 20th of November they finally quitted the place, their health beginning to suffer again.

We must stop here one moment for the purpose of reviewing the last paragraph ; and it will hardly be believed, yet such is the fact, that Dr. Audouard declares that M. Francois never put his hands into the dead bodies at all ; that, instead of seeing each other but seldom, he met them every day : that the first dissection made in the Hospital of the Seminary was made by him, on the 31st of October ; and that M. Bally did not open any bodies until the 8th of November ; whilst Drs. Revera and Campmany, whose names the commissioners do not even deign to mention, had pursued their anatomical investigations throughout the month of August.

Having now sketched the personal adventures of these gen-

tlemen, we come to the substance of their researches : they begin by declaring the salubrity of the situation of Barcelona, but especially of Barcelonetta, the streets of which town are wide and regular, and the foundation a bed of granite rock. They, however, confess that remittent fever occasionally reigns at this place. With regard to the condition of the port, they assert it to be perfectly clean, and that the water is pure, clear, and limpid : there are certain pools of stagnant water upon the beach, to be sure, but then they are only a few toises in extent, and but three inches deep ! They next call to their aid the evidence of M. Simiane, captain of the French brig *Josephine*, who is destined to make a considerable figure in this history. This connoisseur in stinks is introduced for the purpose of proving that the morning wind, which regularly blows from the town, and which constantly conveys all the emanations from the city to the shipping in the harbour, never brought with it any odour which displeased *him*. Now, without disputing this gentleman's taste, we cannot help thinking that the odour from the cleanest city in the world, cannot be fragrant ; but, when that city is a Spanish one, we can only pity the cause which is obliged to have recourse to such feeble support. It appears that the streets of Barcelona are narrow and tortuous ; that they are traversed by canals, which receive the filth of the city to convey it to the sea : these canals are covered with large stones, but so badly joined, that any odour may readily escape and mix with the air. These inconveniences, they allow, are sufficiently unpleasant where the temperature of the air is so high, but they are not much felt excepting after rain, and in Catalonia this does not often occur. They admit that it did rain for some days after their arrival ; but they forget to mention the fact of the great increase of sickness that immediately followed those days of rain, and from which the ignorant had expected great benefit. However, they get rid of these suspicious circumstances by reminding us that Barcelonetta was visited by the fever before Barcelona. The thermometer, which had been, during the months of April, May, and June, and part of July, never above 15° of Reaumur, rose at this latter period as high as 22°. On the 12th of July, the fete of the Promulgation of the Constitution was to have been held, but, as the weather was bad, it was put off until the 15th. The weather being remarkably fine, on that day the whole population was poured upon the ramparts, the quays, and the vast esplanade of Barcelonetta ; the vessels in the port were also crowded with spectators. At this period there were a great number of ships in the harbour, both Spanish and others, recently arrived from the Havanna and Vera Cruz.

Some of these had suffered from yellow fever at those places, some on the passage ; the dead had been thrown overboard, but their goods, clothes, bedding, &c., covered with black vomit, had been preserved on board. The eternal M. Simiane is again brought forward to prove that these things were exposed to the open air under his own eyes ; although the captains had the art to elude the vigilance of the medical police, and contrived to attribute all the deaths that had occurred to falls from the masts, or other accidents. In order to avoid the quarantine laws, the sick were forced to shave and dress themselves, and appear on deck among the crew and passengers, as if in perfect health ; which proves, at least, that neither the crews nor the passengers had found much reason to dread the contagion. Now the marvellous part of the story is, that M. Simiane saw all these things, which the medical police either could not or would not see ; and yet this vigilant and all-seeing captain never said one word upon the subject to any but to these commissioners, and that in the month of October, although the Havanna fleet arrived at Barcelona thirty-three days before any sickness was even *talked of* at that place.

To continue.—On the 15th of July, all the vessels in the harbour were crowded with spectators, and it may be *supposed* (mark this word again in an official paper !) that many of the women and people passed the night on board, stretched upon the mattresses and coverlids of those who had died. The first ship they mention is *Le Grand Turc*, which arrived at Barcelona on the 29th June, 1821, in sixty-one days from Havanna. A little while after, the captain, M. Sagraeras, brought his family on board, which family resided at Sitjes ; they staid there but one or two nights : on quitting the vessel they were taken ill, and all, comprising the wife, children, and a female servant, died at Barcelonetta. Now this would, indeed, be an afflicting tragedy, and a strong case, but for one trifling circumstance,—not one word of this story is true ; and M. Sagraeras, his wife, children, and maid, are, we feel pleasure in saying, all alive and well ; and, what is still better, have not had the fever at all.—This fact is stated upon the authority of M. Zaha, a merchant of Barcelona, an intimate friend of M. Sagraeras. It seems that M. Rochoux was himself the author of this strange mistake, which he communicated to M. Pariset ; and therefore, though the commissioners are to be acquitted of any intention to deceive, they have given us, by inserting this story without making proper inquiries as to its authenticity, an additional proof of the eagerness with which they seized upon every thing which could tend to confirm the opinions they had previously adopted.

It is farther asserted, that thirty-five of the people who had been on board this ship on the 15th of July, died a few days after. Now here again they make an unfortunate mistake; for no epidemic sickness occurred in Barcelona until the 3d of September, just fifty days after the day of the fete. This is proved by the official documents published by the municipality.

We must now proceed to dissect their second story, which relates to a vessel named the *Nuestra Senora del Carmen*, sixty-three days from the Havanna, and having touched at the ports of Alicant and Carthagená. She arrived at Barcelona on the 11th of July. Three of the crew had been ill with yellow fever at the Havanna, and one had died; the remaining three, it is added, had *probably* had the disease, as they had been to America before. Now observe what follows: This ship had received a poor passenger on board at Alicant, for the purpose of conveying him gratis to Barcelona. Two days before the vessel reached that place, this poor man fell sick: and this is the person alluded to as having been obliged to dress himself and appear upon deck as if in health. On the evening of their arrival he was disembarked, and died the next day. Had this man the black vomit? Ask the commissioners, and they answer their own question in the following satisfactory and philosophical manner. Many people, they say, affirm that he had; but, at all events, it cannot be denied but that so mortal a malady had a great affinity to yellow fever! They also think it reasonable to *suppose* that his disease must have propagated itself in the house where he lodged; for, being poor, with what could he repay the hospitality of those who received him?—With his clothes: and no doubt they were made use of by this family.

Let us now just recapitulate this precious, this unique piece of evidence. Nothing is known of this poor man beyond the fact of his having been brought from Alicant, and dying at Barcelona the day after his arrival; but, by the aid of three or four suppositions, he is convicted of having died of the yellow fever,—of having communicated the disease to the inmates of the house where he lodged, and that by means of his clothes, with which they *suppose* he paid for the hospitality he received.

One more circumstance, and we have done, and this relates to our old friend M. Simiane, who, it is asserted, although in health himself, communicated the disease to the landlord of the house at Barcelonetta in which he lodged.

The succeeding pages contain some information relative to the number of deaths during the whole course of this epidemic, and they are calculated at from 17 to 18,000. During its greatest height, from 450 to 500 dead were carried out of the differ-

ent gates of the city in one day. In this instance, as in all previous ones, it was observed that the bakers, and those whose occupations exposed them to great heat, suffered especially; whilst those who were addicted to excesses of any kind were most liable to be attacked. Contrary to what is usually observed, strangers from the northern countries of Europe especially did not appear so obnoxious to the influence of the fever as the natives.

We trust that we may be excused from pursuing the details of this report any farther, especially as we must now bestow a little attention upon the Manifesto we have already alluded to, which will afford abundant and direct contradiction to those assertions of the French commissioners which want of time and space oblige us to pass over; but, before we remark upon that production, we beg to make an extract or two from the recantation of M. Puguille, formerly a decided contagionist, but whose name is to be found attached to the manifesto of the adverse party, and whose abjuration is addressed to Dr. Lassis. Among the motives which induced this gentleman to change his opinion are the following: "The regular march of the fever from east to south-west,—the existence of sick in different parts of the town before all communication with Barcelonetta was cut off, its attacking those who were most rigidly sequestered,—the fact of several individuals in one house being seized with it at the same time. Messrs. Bally, &c. (he continues,) went about seeking only those facts which appeared to favour their own cause; and, in reply to their remark, that one positive fact is equal to thousands of negatives, he says that their positive facts lose all their force when submitted to the test of rigid criticism; a point which, unless we deceive ourselves, we have sufficiently shown above.

In the Lazaretto, in the Hospital of the Seminary, in the General Hospital, neither the medical men nor those who attended the sick suffered the slightest attack. The sisters of the General Hospital escaped with perfect impunity; whereas the purveyor, the apothecary in chief, and others who never entered the wards, and who studiously avoided all contact with the sick, experienced an attack. It is impossible to find, he adds, one single well-attested instance of a sick person quitting the town, and spreading the disease to any of the neighbouring communes; and he urges the strong fact of the inhabitants of Sans, Garcia, and many other places, having escaped the disease, notwithstanding they were included within the cordon which enclosed Barcelona. Hence he thinks it extremely unlikely that contagion could be brought from the Havanna,

when even the small distance of Garcia from the city was found sufficient to impede its communication.

The last remaining document (the Manifesto,) is signed by the following gentlemen: Dr. Maclean, Dr. Lassis, Dr. Rochoux, Francisco Piguillem, Francisco Salva, Manuel Duran, Juan Lopez, Salvador Campmany, Ignacio Porta, Jose Calveras, Antonio Mayner, Raymuno Duran, and Benaventura Sahué. Upon the authority of these names, it is asserted that sporadic cases of yellow fever were met with both at Barcelona and Barcelonetta, as early as February and March of the year 1821; and Dr. Lopez himself was called in consultation to a man who dwelt behind the Exchange, and who died of yellow fever, with petechiæ and black vomit, in the early part of February; and it will be recollected that the accused vessels did not reach the port until the latter end of June. After the disease broke out, numbers of sick retired to Sitjes, Malgrat, &c. but no sickness ensued at those places.

With regard to Tortosa, where the fever was supposed to have been introduced by a dealer in hams, the Junta of Health affirm that, many days prior, a sick man was brought from on board a bark that had never been at Barcelona. It is to be remarked also, that towards the end of summer, that town is always visited by fevers of a very violent character.

With respect to the state of the port, it is asserted, that such was the condition of the sewers, the canals in the streets, &c. that, towards the end of June, it was impossible to pass along the sea-wall without being inconvenienced by the stench produced by the decay of animal and vegetable matter in its vicinity. The examination performed by the commission charged with cleansing the port, proves that the Arequia was obstructed at its mouth by a sand bank, which had caused the accumulation of a mass of stinking water, loaded with the impurities furnished by all the manufactories, slaughter houses, &c. situated upon the banks of this rivulet, from whence a most insupportable stench arose. The modern works of the port appear to have increased the evil, and have produced a source of infection which did not formerly exist.

The mortality was most especially great in those streets in the line of the port; whereas, in those exposed to the north, and more distant from the infected spot, but few sick were found.

The time of the year in which the fever broke out is precisely the period in which epidemics make their invasion in hot countries: this fact has been verified more than once in Spain.

The fever has not been able to establish itself beyond the

walls of Barcelona. No person has been proved to have caught the disease out of the sphere of the operation of local causes.

At the Marine Lazaretto, between the 7th of August and the 13th of September, 79 cases were received, 55 of whom died : not one individual, out of 32 employed in that establishment, took the disease. At the Seminary, 1767 sick were admitted, 1293 died ; but only three cases of the fever occurred among 90 people employed in that establishment.*

M. Ribera, in dissecting a body, wounded his finger deeply with the scalpel : nothing beyond a slight swelling of the axillary glands took place.

Many, who had suffered from the disease in America, contracted it again, and some of these died.

Many families, who secluded themselves in the most rigorous manner, found their precautions in vain.

At the time the barrier was placed at Barcelonetta, on the 3d of September, there were only nine sick in the place : on the 10th instant, they amounted to 162 ; and, finally,

Those who had quitted the place with all their effects did not spread the disease at their new residences ; although some few died of yellow fever which they carried with them.

Such, among many others, are the strong, and we think unanswerable facts which the perusal of this able paper has enabled us to lay before our readers, as confirming the view we have taken of this complicated and highly interesting subject. We, perhaps, have been tedious, and have accumulated evidence which many may consider as redundant ; but we were anxious to collect in one view all the most important remarks which the experience of the last fatal year had produced ; in doing which we have been as careful as possible to exclude all doubtful evidence, on whichever side of the question it seemed to bear. In the same spirit, we must therefore remark, that, whilst we agree with the authors of the Manifesto in most of their views, we were sorry to notice some allusions to the plagues of London and Marseilles, which we think they have unnecessarily introduced in that paper : they savour rather too strongly of the doctrines of the gentleman whose name appears at the head of the list of signatures ; doctrines to which we cannot subscribe, since we believe the plague to be a disease quite distinct in its nature, and we are not prepared in this instance to dispense with those precautionary measures, by means of which, we firmly believe, Europe is indebted for its long exemption from the visitation of that tremendous malady.

* M. Jouarii made the fourth.

Having anticipated in the foregoing pages nearly all that is necessary to be said respecting the works at the head of this article, we have only to say that Dr. Girardin deserves the praise of having given us, in his little memoir, a very accurate topographical account of Louisiana, and the neighbourhood of New Orleans in particular; an example which we hope will be followed by all those who undertake to discuss the subject of all epidemics, wherever they are to be met with. It has been already shown that the Doctor is a modified contagionist. In the latter part of his book he notices, and recommends to the ruling powers, the necessity of stationing raw European troops in such situations, in the different islands, as may ensure them from the operation of the local causes of the disease.

Baron Larrey's paper is principally remarkable for his speculative doctrines with respect to contagious virus, of which he distinguishes two kinds,—the fluid, and the gaseous or miasmatic: the former are the syphilitic, the small-pox, and vaccine poisons; in the latter class he ranks the yellow fever. The venereal virus, he goes on to say, chiefly affects the lymphatics; it can remain a long time inactive in the system, but, when it begins to act, it continues its progress unto the death of the patient, unless arrested by curative means. The variolous poison has a particular affinity to the skin: it is capable of producing a similar disease, but only for a determinate period, after which it becomes inert. The pestilential virus acts chiefly upon the brain and nervous system, though it is occasionally arrested at the nervous plexuses of the armpits and groins; and M. Larrey does not believe it to have any connexion with the lymphatic system. The virus of the yellow fever he considers as the most subtle and volatile of the whole; that it has but a momentary existence, and which corresponds to the acme of the disease. The virus resides in the cutaneous transpiration, or in the eruptions when they are met with.

We see in this attempt of Baron Larrey's a love of generalization and system, to which we think our zealous and imaginative neighbours are too much addicted. It would be easy to contest this explanation step by step, but we have already devoted so much space to this discussion, and we think the weak points of this arrangement so evident, that it is scarcely necessary to point them out to the medical reader. The just reputation that M. Larrey enjoys rendered it incumbent upon us, however, to state his opinions; and we need hardly say that, in conformity with those opinions, he advocates the propriety of precautionary measures.

MONTHLY SUMMARY

OF PRACTICAL MEDICINE.

1. ANATOMY AND PHYSIOLOGY.

Mr. SHAW on the *Par Vagus*.

“The par vagum connects the larynx, pharynx, lungs, heart, and stomach; and the sympathies it produces in health and disease, are very many. Disorder of the stomach deranges the secretion of the larynx; a vomit, or nauseating medicine will loosen the viscid secretion of the larynx and pharynx; disorders of the stomach, acting through the pulmonic plexus, will occasion cough; and medicines acting on the stomach will alleviate asthma. Through the plexus of this nerve, the heart and lungs are united, ever corresponding in action. When life seems extinguished by suffocation, (in experiments on animals) pricking the heart will be followed by respiration; and in the apparently drowned, the play of the lungs, in artificial breathing, brings after it the action of the heart. It is well known how disease of the lungs affects the heart; but it is not so generally observed how much disease of the heart resembles pulmonary disease.

“Looking to the distribution of the par vagum on the stomach, and the plexus of the nerve, in its course upon the œsophagus, it will not appear surprising, that disorder of the uterine system, affecting the stomach, and also primary disorders of the stomach itself, should produce the *globus hystericus*, or paralysis, or spasms of the pharynx and œsophagus. Although the heart and stomach be separated by the diaphragm, yet through this nervous cord they are united: and this explains why disorder of the stomach should produce such changes on the heart’s action. The pause, or intermission of the pulse, which in many diseases, is a fatal symptom, is often produced in a manner less alarming—merely by irritation of the stomach. Seeing these many connexions of the stomach with the vital parts, through this nerve, our surprise ceases at a blow on the stomach proving instantly fatal.”—*Manual of Anatomy*.

ART. II. *The Modern Practice of PHYSIC, &c. &c.* by ROBERT THOMAS, M. D. *With an APPENDIX, by EDWARD MILLER, M. D. Professor of the Practice of Physic in the University of New-York.* New-York. Collins and Perkins. 8vo. pp. 697. 1811.

ABOUT five years ago, Dr. Miller framed an elaborate report on the yellow fever of 1805, in which, it is understood, the whole strength of the doctrine of non-contagion was, for the first time, disclosed, and all its numerous arguments concentrated. This report was first published in a pamphlet form, and addressed to the governor of the state; next it was ushered to the world through the medium of one of our daily prints; it came forth a third time in the *Edinburgh Medical Journal*; and since that time the doctor has revised and improved it, and it is now again sent forth, in the shape of an Appendix to Dr. Thomas' *Practice of Physic*, with the view to remove all remaining medical heresy on the subject of contagion.

With Dr. Thomas' work we shall not, at this time, concern ourselves. The slight examination, which, only, we have been able to bestow upon it, leads us readily to coincide in the opinion expressed by Dr. Miller in the introduction to his appendix, that "it is executed with a degree of ability and judgment which reflects much honour on the talents of the author." It is also added, that "in Great Britain it stands so high in public estimation as to have passed through several editions within a short period." So popular a work then afforded the doctor an excellent opportunity of giving currency to the tenets held by the advocates for the domestic origin of

yellow fever, and a co-extensive circulation of his own performance on that subject. We must however observe, that this method of seizing upon a branch of a particular subject, occupying less than two pages in a volume of seven hundred, and making it serve as a pretext for annexing to the work a heavy appendix, containing many gratuitous assertions, on which are founded doctrines and arguments in their support, in direct opposition to those entertained and expressed by the author himself, is a new method of giving currency to one's own opinions, by compelling another's assistance who holds them in abhorrence. The volume before us is thus so far perverted from the author's intentions, as that hereafter it is to circulate the mischievous doctrine of domestic origin, notwithstanding the author has taken some pains to manifest his reprobation of it. Let it be observed, that the appendix is not an answer to any thing advanced in the volume to which it is subjoined, but an independent, abstract essay, very improperly attached to the labours of one who dissents totally from all it contains. If this is encouraged, we shall next find Chisholm himself, by means of an artful appendix, become an advocate for the doctrine of domestic origin. How Dr. Miller can reconcile this treatment of Dr. Thomas with propriety, delicacy, and fair dealing, we shall leave to himself.

Considering the appendix in the important point of view before mentioned, our object is to subject the facts and arguments advanced in it to an impartial scrutiny.

Dr. Miller begins by "deprecating all personalities whenever the principles of science, especially of medical science, are undertaken to be examined." "Whatever regards the health and safety of mankind (he now seems to think) is too grave a subject to become the sport of

passion, or the vehicle of invective and personality." We cannot too highly commend these sentiments, and have only to regret, on his own account, that they had never occurred to him before. During the thirteen years in which he has been employed in compiling and publishing the Medical Repository, what adversary has ever escaped those personalities here so much deprecated. If he has forgotten himself, we refer the doctor to his former volumes and hexades for the truth of this remark. Let him turn to the articles containing reviews of Haygarth and of Chisholm, as well as of those American writers who have had the misfortune to differ from him in opinion, and he will there see how freely he and his coadjutor have been accustomed to deal in the haughty rebuke, bitter sarcasm, or the taunting irony. And they were left to enjoy their triumph in silence; for there was no rival work in which the injured could make their defence. But as we are now assured that all personalities will henceforth be discarded, we congratulate Dr. Miller on the resolution he has adopted, and sincerely rejoice at the information.

Dr. Miller divides his subject into various heads, under the form of questions; the first of which is,

"What are the causes and nature of the *yellow fever*?" This malignant disease (he says) has never been known to prevail except in tropical climates, or in those seasons of the more temperate climates in which the atmospheric heat has for some length of time been equal to the tropical heat, that is, at or about eighty degrees of Fahrenheit's thermometer." "There is no instance in the United States or in Europe of an epidemic yellow fever, except at these degrees of heat, nor of its long continuance after the atmosphere has been reduced to a much lower degree of temperature." "The primary and essential cause of the yellow fever is a *miasma* or *pernicious* exhalation floating in the atmosphere." "In order to produce these *miasma*, it is necessary that there should be a concurrence of heat, moisture, and a quantity of decaying animal and vegetable matter. It is therefore exhaled

by heat from low and moist grounds, overspread with the offals of animal and vegetable substances, from such substances collected in large masses, from any place where the process of putrefaction is going on to a considerable extent." "This exhalation is uniformly more frequent and virulent in sea port towns, in situations along sea coasts, in plains or near rivers, lakes, marshes, and swamps, or wherever stagnant waters are found, than in the interior high and mountainous districts of the country."

Such is Dr. Miller's theory as to what he calls the "*primary and essential* cause of yellow fever." To this, however, must be added, he says, "certain *secondary* or exciting causes," which are, "exposure to heat, fatigue, cold, dampness, intemperance, fear, anxiety," &c. We mean not to employ our time in opposing hypothesis to hypothesis, which, in the end, is generally found to terminate without satisfaction to either party concerned, and least of all that of the reader; but we mean to come, at once, to plain matter of fact, and on that alone we shall rely. We shall oppose facts to theory, and so long as we find ourselves armed with the former, we shall hold ourselves invulnerable, though Dr. Miller should continue to build speculation upon speculation, and to imagine cases to support them without end. To this test, then, let us now subject the foregoing extract.

Those who have lived in this city for the last ten years, and have taken notice of the different times and seasons when, and places where, the yellow fever has broken out and prevailed, on both sides the East-river, sometimes in New-York, sometimes at the Wallabout or Brooklyn, will find it extremely difficult to comprehend how any one of these local causes, or all of them united, can embrace these different seasons and places, and satisfactorily account for what has appeared in them all. Is it not well known, that during the above period it has at one time prevailed

in New-York, and not at the Wallabout ; at another, at the Wallabout, and not in New-York ; a third time, in New-York, and not at Brooklyn ; and a fourth time, at Brooklyn, and not in New-York ? Now, as these villages are only about a mile distant from each other, and as New-York is separated from them only by a river of about eight hundred yards in its width, it is manifest that the "tropical heat" is about the same at one place as at another, and therefore climate cannot be allowed any agency in producing the disease. But Dr. Miller mentions this heat as being essential to produce that "pernicious exhalation which floats in the atmosphere," and is the "primary cause of the yellow fever." But he says there must be a "concurrence of heat, moisture, and a quantity of decaying animal and vegetable matter." From the above, we repeat, it is apparent that the degree of both heat and moisture of atmosphere must be nearly the same at the same time in all the different places mentioned. Nothing then remains to enquire after but the doctor's "decaying animal and vegetable matter." We shall not be contradicted by any one who recollects facts, or will turn to the publications of the times, that when the yellow fever broke out at the Wallabout, in 1804, it was proved by the undeniable testimony of several witnesses, delivered under the solemnities of an oath, that the place was liable to no imputation of any one of Dr. Miller's enumerated causes, nor of uncleanness of any sort. The Wallabout is a small hamlet, consisting of about twenty dwelling houses only, erected at suitable distances from each other, and then contained a number of ship-carpenters, all of whom were well accommodated : far from being situated in "low and moist grounds," it stands upon the hard, gravelly and sandy bottom which forms the shore of the

river ; nor is there a foot of *made ground* in the place. In short, there was not the shadow of a pretence for supposing, any where near it, the doctor's "decaying animal and vegetable matter."

We are not forgetful that a long and particular statement of facts, totally different from this account, came out in the Medical Repository ; and when the truth was afterwards made to appear incontestibly, we cannot conceal that we experienced a degree of indignation, that the editors should have never taken the least notice of it, but shewed themselves so utterly destitute of that candour and magnanimity, which readily acknowledges error, and hastens to correct it, as to persist in propagating false statements wherever their book obtains circulation. What, permit us to ask, what must the public think, what ought it to think, of a literary work which propagates important mistatements of material facts, and when it is afterwards convicted of so doing, instead of retracting, never permits the corrections to find their way into the work ? Is not such conduct an injury to the cause of truth, and an imposition on the community ?

While the yellow fever was raging at the Wallabout with a degree of malignity and mortality, as great in proportion to the number of the inhabitants, as perhaps ever was known, New-York remained entirely exempt. Such also was the fact, when the yellow fever prevailed at Brooklyn two years since ; but concerning this we stated the case so fully in a former number, that it is quite unnecessary to re-examine it here. In a word, the disease has prevailed alternately in each of the three places, alone, all lying in the same latitude, and subject substantially to the same local causes. A single fact affords a simple, satisfactory solution of every difficulty. *While the ship-*

ping were permitted to come along side our wharves, the yellow fever prevailed in New-York; but since 1805, that is, since they have not been allowed to approach within three hundred yards of us, but are at liberty to approach the opposite shore, and lie at their docks, the disease has been communicated to them, first to the Wallabout, and next to Brooklyn, while New-York has remained totally exempt. With this single fact before us, why should any man of common sense perplex himself to divine the origin of this epidemic, by having recourse to theories about "rivers, and lakes, and marshes, and swamps, and made ground?" In neither of the above villages are rivers, or lakes, or marshes, or swamps to be found; and as to "made ground," there is not a foot at the Wallabout, little at Brooklyn, and in New-York there is nearly as much at the North-river side, where the yellow fever has never first appeared, as at the east side; and be it pernicious or be it otherwise, this same made ground has been going on with the same industry and success, for the last six years, as before, during which a whole street nearly has been made on the North-river, yet the epidemic has not once appeared in the city, although it has in the same period of time twice depopulated the villages on the opposite side of the river. How long is theory to bear down plain and undisputed facts, and sophistry to stifle common sense? But, says Dr. Miller, as the materials of putrefaction and the degrees of heat in a large city, greatly exceed what is found in the adjacent country, so the diseases arising under such circumstances must be proportionally more malignant. Such is the doctor's reasoning, but such are not the facts. The yellow fever was as malignant and as fatal when it prevailed in the adjacent country villages, as it

was when it appeared in this city ; once introduced, there was no apparent difference.

We pass over the next head for the present, in order to come to the third question, viz. *Is the yellow fever a contagious disease ?* The doctor, who has long stood pre-eminent among the non-contagionists, takes the negative of the question. " But (he observes) before proceeding to offer reasons in detail against the non-contagiousness of the yellow fever, it is proper to premise some general observations on the subject : " and then he goes on to give a definition of contagion, in which, like a dexterous combatant, he exerts himself to obtain a point, by defining it so as to suit himself, begging the very question in controversy. After talking very learnedly about secreting contagious matter by a morbid action " of the vessels," he says, " its action (the action of contagion) is altogether *independent* of external circumstances, such as the state of the air," &c. According to this, it must, to be sure, be admitted that the yellow fever is not contagious ; but then, neither is any known disease whatever. The small-pox, although allowed to be the most contagious of all diseases, is not independent of external circumstances. " If forty persons, (says he) who have never undergone small-pox, be closely exposed to the effluvia of a number of patients lying ill of that disease in the ward of a small-pox hospital, thirty-nine certainly, and probably the whole number, will be infected."

But has the doctor forgotten the case of the *Royal George*, on board of which, while at sea, the small-pox broke out, but nearly one hundred out of eight hundred and eighty totally escaped the contagion, and the disease disappeared altogether. Now, then, if the contagion of small-pox is so universal in its operation, as certainly not to spare more than

one, and probably not one of forty in a hospital, how is it to be accounted for that in the above case it should have spared about one hundred out of eight hundred and eighty? Will the doctor have the goodness to explain to us the cause of this difference? If it was not deprived in a great degree of its malignity in this instance of the Royal George, by being exposed to the ventilation of a constant sea-breeze, but is always altogether independent of external circumstances, to what was its comparative mildness owing? The doctor is not at liberty to say that in the hospital the air was less pure, for we have his word in the same paragraph, that "none of the truly contagious diseases derive any additional force from impure air." Neither will it do for him to say (as he does in p. 633) that "the greater contagiousness arose from the concentration of a greater quantity of contagious matter within a small space," because he afterwards (p. 676) says, although "the miasmata which produce yellow fever, are more or less noxious as they are more or less concentrated, yet *this is a property* which does not belong to the specific poison of small-pox." A man who thus contradicts himself without ceremony, sets refutation at defiance. We leave the doctor to his own reflections; but he must recollect, that the web in which he finds himself entangled is one of his own weaving.

"The agency of contagion in the propagation of the yellow fever," says he, "is rejected for the following reasons," and he proceeds to give us ten. They shall be examined in the order in which they stand. But before we go any further, it is certainly fit and necessary, that one should come to an understanding as to the subject of the dispute: What is meant by the contagion of the yellow fever? If Dr. Miller means one thing, and we mean

another, it follows, that we are not at issue, and all further controversy must be useless. By the contagion of yellow fever, then, we mean that peculiar species of contagion only which is peculiar to that disease ; we do not mean, as our antagonists have, more than once, strove to make us mean, the contagion of small pox, or syphilis, or measles, or any other contagion but that of the yellow fever itself. But they say a truly *contagious disease* is one that reproduces itself in the same manner, and with the same certainty, under all possible circumstances ; as if any such disease ever existed. This attempt on their part to place us on ground which we do not intend, and never intended to occupy, is both unfair and disingenuous. It may be an adroit method of managing a dispute, but it is doing the highest injustice to an adversary, and to the cause of truth. Nothing, perhaps, has contributed more to blind and mislead the public in this controversy, than this very artifice of representing us as having maintained a doctrine which we never advanced, and then undertaking gravely to refute it. This certainly they can do, but then they claim the honours of a triumph, as though they had gained a victory, when there has never been a contest. It is necessary the public should be completely disabused on this point ; and therefore, although we took some pains to explain ourselves in a late number of the Register, we shall do it once more, here.

When we say the yellow fever is a contagious disease, we mean to be understood as saying, and saying only, that it is a disease which, under certain circumstances favourable to such operation, may be communicated specifically from one person to another, either directly from person to person, or indirectly, by means of clothing, bedding, or any thing capable of receiving and conveying

the disease. This is precisely our meaning, expressed in the simplest manner, carefully avoiding all attempts to account for the manner how this is brought about, or how it operates; and therefore we say nothing respecting secretions or excretions, or morbid actions, &c. &c. a deal of which is sure to be brought forward on all occasions, as if the object of our antagonists was to perplex, in order to confound. We express our opinion in a word, when we say that the *yellow fever* is communicable from one person to another. But it is communicated, or not communicated, according to circumstances. This is the whole extent of our doctrine. Nor is it necessary to any useful purpose that we should advance a step farther. This doctrine, once established, we may then with propriety call upon our law-givers for a system of quarantine laws to prevent any intercourse whatever between the diseased and the healthy, as the only known, safe and certain course.

To what practical use, we ask, as it regards this subject, has all this learning been bestowed on secretions and excretions, and morbid action? And of what possible concern to the public is the distinction between koino-miasmatic atmosphere, and idio-miasmatic atmosphere? And why all this violent controversy which has been raised about the exact degree of certainty with which any disease must communicate itself, before it can be entitled to rank as a contagion? If only two out of twenty, for instance, become diseased by infection, to what purpose would you show the other eighteen escaped? If those gradually accustomed to its action escape altogether, to what valuable purpose is this mentioned as to those who, under different circumstances, do not escape? The only purpose, in either case, must be to show by argument, that the disease is not a contagious disease; but

this argument must vanish before the reply, "We acknowledge that, as to those who escaped, from whatever cause, the disease was not contagious, such was their situation, or such the circumstances in which they were placed, that they were not subject to its action; but on the other hand, as to those who did not escape, the disease as to them certainly was contagious;" to argue, that it was not as to them, because it was not so as to the others also, is nothing less than to set up inference against fact. Hence it is, that the non-contagionists are so desirous of establishing their own definition, that a disease must be communicated with equal certainty in all places and seasons, independent of external circumstances, before it can be denominated contagious. If so, if this be the only correct definition of contagion, then we admit, that the yellow fever is not a contagious disease; it is only a *communicable* disease. But what advantage do the non-contagionists gain by this concession? They contend that no disease ought to be called *contagious*, that does not affect every one exposed to its action, and this under all circumstances and in all seasons; thus excluding the yellow fever from their list. We, on the other hand, maintain, that every disease which is communicated from person to person, under any circumstances, or at any season, is, *quoad hoc*, *contagious* or communicable, and that the yellow fever, therefore, comes within the definition. Why should not its introduction into our cities, we ask, be guarded against, if at first only one in fifty is liable to be attacked by it; since we know its nature to be to multiply in regular progression, and every new instance increases its force and activity, until from being at first but one in fifty, it soon becomes one in twenty, then one in ten, then one in five, until at length the atmosphere becomes so impure and infected, that not merely a majority of those exposed do not, but scarcely

one in ten does escape ; thus equalling in malignity and certainty the small-pox itself. Can we then, whether we call it contagious or communicable, can we be too anxiously vigilant to provide against its introduction ?

Our great object is to obtain a good and effective system of quarantine laws, and such, we contend, if well and faithfully executed, will forever secure the city of New-York against a disease which, when once introduced and become an epidemic, makes more frightful havoc than any other in the known world, the plague only excepted. The object of those opposed to us, is to show that the disease is not a contagious one ; that quarantine laws are absurd, because it is not possible to introduce it from abroad ; that it is the produce of our own climate ; to borrow their own libellous expressions, that “ we live in the latitude of pestilence,” and that, therefore, all attempts to prevent its introduction from a foreign country, are futile and ridiculous, while at the same time, these very gentlemen make so wide a difference between their theory and their practice, that for a bountiful reward, they have no scruple to undertake the superintendence of those very quarantine laws which they thus hold in derision.

“ *Is the yellow fever a contagious disease ?*” This is the question before us in order. “ The agency of contagion (says Dr. Miller) is to be rejected for the following reasons,” of which he gives us no less than ten. Be it so. They shall every one be put fairly to the test in the order in which they stand. It will be a business of some labour, and will consume some considerable time ; but since the non-contagionists repose themselves on this body of learning and ingenuity, we will not be deterred by the length of the way from going through with it, and we trust we shall do so to the satisfaction of every impartial lover of truth.

(To be continued.)

DOMESTIC INTELLIGENCE.

Medical School of New-York.

IN the last number of the Register, page 523, some account was given of the recent re-organization of the College of Physicians and Surgeons in the city of New-York, and a list of the appointments in that institution, inserted from the official report of the regents of the university. Though the laudable views of the regents, in uniting the respective talents of the two medical schools, have in a partial degree been frustrated, on account of the non-acceptance, by some gentlemen, of the professorships to which they were chosen, it affords us particular satisfaction to add, that the college is now in a most promising state of advancement. As an evidence of this fact, it need only be stated, that at the first medical commencement in this institution, held on the 15th of May last, (subsequent to the late act of the regents) the degree of *doctor in medicine* was granted to the following eight young gentlemen, who had previously undergone the necessary private examinations, and publicly defended their respective inaugural dissertations. This was a greater number of degrees in medicine than was ever before granted at one time in this city, since the establishment of a medical school in New-York. The honours of the college were conferred by the learned and venerable president, Samuel Bard, M. D. in the presence of the chancellor and regents of the university, the trustees of

To render his geology interesting and instructive, Dr. Mitchill has in his possession, a grand and extensive collection of the materials of our primitive rocks in the eastern regions, of the secondary strata at and around Niagara, from the western border, and of extraneous fossils from almost every memorable section of the United States.

R E V I E W.

ART. I. *An APPENDIX to Thomas's Practice of Physic, by EDWARD MILLER, M. D. Professor of the Practice of Physic in the University of New-York. New-York. Collins and Perkins. 8vo. pp. 697. 1811.*

(Continued from page 103.)

According to our promise we resume the review of the Essay before us.

Dr. Miller informs us, that the agency of contagion is to be rejected for *ten* reasons. We are told of a certain mayor in France, who not having saluted the entry of a French monarch into the city over which he presided, with the discharge of cannon, went out to meet his majesty with a formal speech, for the purpose of informing him that he had ten reasons to offer why the discharge of cannon had been omitted: first, because they had no cannon; he was proceeding to his second, but the king interrupted him, and told him, that his first reason was sufficient, and he would spare him the trouble of mentioning the other nine. Right glad should we have been to discover any one among the doctor's ten reasons so potent as to spare us the trouble of examining the rest; but after all our labour, we have the misfortune to confess, that in vain have we diligently examined the ten to discover any one that ought to satisfy a mind seriously engaged in the pursuit of truth. That our readers, however, may judge for themselves, we shall proceed to set them in order be-

fore them, accompanied with a few remarks upon each as we go along.

No. 1. "No relation is observed between the source of the supposed contagion and the spreading of the disease to individuals or families; nor was there ever any successful attempt to trace in regular series, the propagation of it to any number of persons, from the first case, or from any single point of infection. If the first ten or twenty cases which occur in any season be strictly scrutinized, most of them are found in their origin to be distinct and independant of one another. Instead of gradually pervading, or creeping slowly from one neighbourhood to another in the tract of infection, as is invariably the case with contagious distempers, this disease is often found scattered at distant and unconnected points, and cases start up singly, in situations where contagion could neither be traced nor suspected."

We should hope that the single, unsupported assertions of Dr. Miller, or of any other party writer, is hardly to be received in the place of evidence; hardly to be considered of so unimpeachable a nature as to defy the contradiction of proof. The above statement we are compelled to declare is wholly unwarrantable. We might refute it by a multitude of familiar instances; by every case of the yellow fever that has been the subject of serious investigation. To produce them here, would fill not only a whole number of this work, but a volume: However, to put the fact beyond question at once and forever, we shall content ourselves, by introducing to our readers a few extracts from Dr. Miller's great authority, Dr. Rush, of whom Dr. Miller thus speaks, in the very appendix now under review. "Dr. Rush, who has treated the subject (in question) at much greater length, and who may justly be considered *as the leader in the investigation and establishment of the doctrines [of domestic origin] respecting that disease*, (yellow fever) which are now maintained by a great majority of the physicians in the United States."

That Dr. Miller should think the great majority of physicians were of his opinion, is not an unnatural mistake, but with that we shall not meddle at present; our business is with his assertions, and those of his confessed leader, Dr. Rush, of whose authority we avail ourselves, considering it the best way of settling the point in dispute, to appeal to the identical authority which is quoted with respect by our opponent himself.

“The first cases of the fever (says Dr. Rush) have been *clearly traced* to the sailors of the vessels who were first exposed to the effluvia of the coffee,”* p. 156. “The rapid progress of the fever from Water-street, and the courses through which it *travelled into other parts of the city*, afford strong evidence that it was at first propagated chiefly by exhalation from the putrid coffee,” p. 155.

With Dr. Rush's coffee we have nothing to do. Dr. Miller has boldly and unqualifiedly asserted, that “*there never was any* successful attempt to trace, in regular series, the propagation of the yellow fever from any single point of infection;” yet here we find his acknowledged leader declaring, that it was *clearly* traced to the sailors of a certain vessel; and further declaring, it was traced from Water-street, through which it travelled into other parts of the city. Dr. Miller has also asserted, that “no relation is ever observed between the source of the supposed contagion, and the spreading of the disease to individuals.” But Dr. Rush, (p. 157) says, “from three of those persons who came under my notice, the disease was evidently propagated by contagion; from one

* Rush's Account of the Bilious Remitting Yellow Fever, as it appeared in Philadelphia in 1793, 2d edit.

of them, to nearly a whole family ; from another, to a girl of eight years old." And again, he says, (p. 107)

"Citizens thus impregnated with the contagion, communicated it in several instances to their country friends."

Another case must also be adduced, which at this moment occurs to us, and which we deem it the more proper to give, because it comes from a gentleman of Dr. Miller's own principles, and because he has himself recorded it in his own work, the *Medical Repository*, vol. 2, p. 402, which, therefore, he ought to have borne in mind if he did not, or if he did, he ought in common decency to have refrained from making the broad assertions, to which it is now offered in direct contradiction. In a letter to Dr. Mitchill, giving an account of the yellow fever in New London, in 1798, and where it never appeared before nor since, the writer states :

"We ascertained with precision to be relied on, that the whole number of persons whose complaints clearly indicated the pestilential, or, as it is called, the yellow fever, did not exceed two hundred and forty-six ; and I give it you as *a very important fact, on which you may rely*, that, of the above number, two hundred and thirty-one cases were *clearly traced to the spot where the sickness commenced*, that is, the patients were conversant, or had been in that part of the city a few days before they were seized."

And yet, Dr. Miller, with this very communication before him, and which he speaks of in high terms in a subsequent volume, had the hardihood to assert, that "no relation was observed between the source of the supposed contagion, and the spreading of the disease to individuals or families ; nor was there ever any successful attempt to trace, in regular series, the propagation of the yellow fever from any single point of infection."

Let Dr. Miller reflect upon his broad assertions, let him consider the above, and reconcile them if he can. Dr. Miller ought to know, that in a work of science, and on a subject of such immense importance to our country, and more particularly to our city, a scrupulous regard for accuracy would better fulfil the expectations of the public, than rash and unqualified assertions in the very teeth of fact. Dr. Miller finishes by saying :

“ Instead of gradually pervading families, or creeping slowly from one neighbourhood to another, in the track of infection, as is invariably the case with contagious distempers, this disease is often found scattered at distant and unconnected points, and cases start up in situations where contagion could neither be traced nor suspected.”

It is truly astonishing, it is in the highest degree painful, to find a man of sense and character, thus desperately attempting to impose his own unqualified, unsupported, and unsupportable statement upon the community, in the place of facts. We can truly say, that ever since the origin of the yellow fever began to be more particularly and carefully investigated here, that is, since the year 1794, we have uniformly found facts directly the reverse of what is above stated ; and we may safely appeal to the publications of the time for the correctness of this assertion.* Uniformly has the disease been found to have gradually pervaded families, and to have slowly crept from one neighbour-

* Vide the “ Opinion of the Medical Faculty of Baltimore relative to the yellow fever of 1800,” all of whom are non-contagionists ; yet they say, “ the *gradual manner* in which this disease becomes epidemic is an additional proof that it is *not* derived from foreign sources.”—*Med. Rep.* vol. 4, p. 354. This is very well—the same conclusion from opposite premises !

hood to another in the track of infection ; nor do we recollect that ever we heard of an instance, scattered at a distant and unconnected point, which could not satisfactorily be traced to the source of the disease, or communication with the sick. In support of this fact, we beg leave to make the following extract from the address of the Board of Health, issued on the 12th of September, 1805.

“ The Board have formed a decided opinion, that the principal seat of the prevailing disease is that part of the city included between Burling-slip and Old-slip, as far west as Pearl-street. Almost all the cases of disease which have occurred, can be *distinctly traced to a communication with that part of the city.*”

But let us once more hear what Dr. Rush, the pride of Dr. Miller's sect, has said on this point.

“ For a while this fever was confined to the above mentioned part of the city, but the disorder is spreading, and now appears in other places, so that several are affected in other parts of Water-street ; some in Second-street ; some in Vine-street ; some in Carter's alley ; some in other streets ; but, in most cases, *the contagion can be traced to Water-street.*” p. 19.

In order to strengthen his proofs, that the yellow fever is not contagious, Dr. Miller says :

“ The proportion of single cases in the midst of families is always great, and the instances of any large portion of families being attacked, were comparatively very rare in the last epidemic.”

But the case is imperfectly stated. To have enabled the writer to draw his inference, he ought to have gone further, and told us, that after the attack of an individual in a family, the remainder of the family still continued to reside in the same house ; but it is well known, that the directly contrary was the case. The alarm given by the attack of an individual was so great, that the rest of the family generally made their escape as soon as possible,

leaving the sick to the care of a single nurse ; some few instances excepted. And this abandonment of the sick is one item of accusation brought by the Medical Repository against contagionists ; considering it a consequence of their doctrine. But we are saved the trouble of refutation, for by turning back only two pages, we shall find the doctor refuting himself.

“ It is proper (says he, p. 662) to premise, that the attack of many persons in the same neighbourhood, or even of whole families by a reigning disease, affords no proof of contagion.”

Thus, in one page he tells us, that the agency of contagion in yellow fever is to be rejected, because, among other reasons, “ the instances of any large portion of families being attacked with it were comparatively rare ;” and in another, he maintains, that “ the attack even of whole families by it, affords no proof of contagion.”

But to proceed :

“ In order to explain this scattered, remote, and unconnected occurrence of cases, the advocates of contagion are obliged to resort to the extravagant supposition of the contagion being diffused through an extensive range of atmosphere by the effluvia of the sick.”

By any one not acquainted with the licences habitually taken by Dr. Miller, this would be regarded as a piece of no ordinary assurance. When, we demand, have the advocates of contagion resorted to such an hypothesis to account for such facts ? So far from it, they have never even admitted the existence of such facts ; they are only to be found, we aver, in the artful misrepresentations of Dr. Miller. The only instance we ever heard or read of, that comes any where near this statement of remote cases caused by contagion being diffused through an extensive range of atmosphere, is to be found in a letter from Dr. Miller’s

friend and guide, the celebrated Dr. Rush, to the citizens of Philadelphia, published by him in the fever of 1793 ; and in which he attempts to account for the yellow fever's making its first appearance at Kensington, which, he says, was generated and received on board a Danish ship, by putrid coffee, as she lay at Race-street wharf, in Philadelphia, about three miles off.

“ Upon inquiry (says the Dr.) it appears, that the first person who died with this fever, about the 5th of the month, in that village, had been previously exposed to the atmosphere of the wharf; [between Arch and Race-street] and that three of the crew of the Danish ship, who are now ill of the disease at Kensington, received the seeds of the disease on board their ship, while she lay at or near Race-street wharf. If these facts could not be ascertained, it does not follow, that the disease was not generated by the coffee; for, morbid exhalations, it is well known, *produce fevers at the distance of two and three miles*, where they are not opposed by houses, woods, or a hilly country.”

Thus saith Dr. Rush ; and if he had been speaking of remittent fever, we should not perhaps have any dispute with him about the fact, but it is the specific yellow fever he is speaking of ; and we venture to say, that he is perhaps the only man on record who has ever attempted to explain such “ remote cases ” in such a manner. Let not Dr. Miller then attempt to palm such fancies on the advocates of contagion ; it is the physician he boasts of, as one “ who may justly be considered as the leader in the investigation and establishment of the doctrine,” [domestic origin and non-contagion] to whom it is attributable. By the way, in this compliment, (as, doubtless, Dr. Miller considers it,) there is, we fear, more of flattery than truth, for Dr. Rush is not the leader ; on the contrary, while others were strenuously contending for such doctrines, Dr. Rush published the first edition of his works, for the purpose of

maintaining and propagating the diametrically opposite doctrine. Nay, so far did this distinguished physician then carry his ideas of contagion, as seriously to maintain, that the yellow fever was conveyed across a street of one hundred feet in width; that one man took the fever from another sick of the dysentery, and that two cats were infected by licking some milk that a patient had thrown up. But a little flattery sometimes does wonders. After all, who but must experience some small astonishment at the effrontery of the man, that, after ascribing to the contagionists an opinion advanced by his own acknowledged leader, proceeds to ridicule it as an "extravagant supposition," to brand it as a "new and inadmissible doctrine, utterly repugnant to all the principles and laws of contagion," and "inconsistent with itself?" Dr. Miller, having thus sufficiently ridiculed the above opinion, finishes the paragraph by giving his own. Here it is, and let him who reads stare with what wonder he may.

"Nothing can account for this local, stationary, inexhaustible poison, but the exhalations from the masses of filth and corruption overspreading a large area of ground, forming a vast hot bed of putrefaction, incessantly teeming with miasmata, and thereby, in despite of currents of air, loading with the seeds of disease every successive portion of atmosphere that sweeps or stagnates over the pestilential surface."

Thus, then, the yellow fever is disposed of once and forever. In the first place it is a poison, although, according to the same gentleman and his party, it is nothing more than a higher grade of our common bilious remittent; here it is however not only a poison, but it is a local poison, a stationary poison, and an inexhaustible poison. It is *local*, because it makes its appearance in some place or other; and this must be granted. It is *stationary*, because it ne-

ver moves ; it is once in New-York, and always in New-York ; and it is *inexhaustible*, like a grain of musk, because——because the more it poisons the more it may ; it never ceases to poison whoever comes in its way. It is the true object of a definition to point out wherein the object agrees with, as well as wherein it differs from all other objects : Hence the precision as well as eloquence of this paragraph. Nothing can account for such a terrible poison, we are informed, but exhalations from masses of filth and corruption overspreading a large area of ground (witness ye people of New-York, Philadelphia and Boston !) forming a *vast* hot-bed of putrefaction, (witness, O ! ye inhabitants of New-Haven, Haddam, and New-London ; of the Wallabout, Brooklyn, and Amboy !) incessantly teeming with miasmata, [bringing forth little atoms,] and thereby, in despite of currents of air, [and common sense,] loading with the seeds of disease every successive portion of atmosphere that sweeps or stagnates [pretty alliteration !] over the pestilential surface.”—Yes, the pestilential surface of the sandy shores of the Wallabout, of Brooklyn, and of Amboy ! Well might the learned and elegant Chisholm exclaim, on reading the above passage in Dr. Miller’s Essay : “ Such hyperboles are unworthy the man who affects accurate observation and acute discrimination. As well might he, with the poet, describe the approach to the infernal regions to be the eastern shores of the Manhattan :

“ Vestibulum ante ipsum primisque in faucibus Orci,
Luctus et ultrices posuere cubilia curæ :
Pallentesque habitant morbi, tristisque senectus,
Et metus, et malesuada Fames, et turpis egestus,
Terribiles visu formæ.”

And he justly observes, that “ the very labour bestowed on this picture of local contamination manifests its absurdity.” “ When we compare this (he adds) with many known instances of accumulations of filth in the cities of other countries, from which no such consequences result, even towns within the tropics, we must be satisfied that the whole is the fabrication of Dr. Miller’s fancy.”

Dr. Miller’s second reason for rejecting the agency of contagion in yellow fever, is because, as he says,

“ The pretended contagion is admitted to produce no effect in our climate, except in particular situations, at a particular season of the year, when an impure and noxious atmosphere, which ought to be considered as a sufficient cause, is acknowledged to exist. But, (says he) to consider a disease as contagious, which at the same time exhibits no appearance of that quality but in certain climates, and in such climates only in certain places ; at such places only in certain seasons, and even at such seasons only after a particular degree of heat and moisture, is undoubtedly to lose sight of all the established properties and laws of contagion.”

All this is easily said ; but it is sometimes much easier to pen a flippant assertion than to prove it afterwards. And to do the doctor justice, he has not, in the present instance, even attempted it. What Dr. Miller means by contagion we know not ; but according to the definition given of it by Dr. Hosack, in No. I. Vol. II. of the Register ; a definition more accurate, precise and satisfactory than any we have yet seen, and which we therefore fully adopt, we cannot, at all, understand how it is at variance with the laws of contagion to consider the yellow fever as a contagious disease. For instance, why may not a disease be considered as contagious because it is so only in certain climates ? Though this, by the way, is only another of the artifices which abound in this Essay ;

for nobody has contended for such a qualification in the case under consideration ; but admitting the fact, what then ? Why may not such a disease be contagious ? No one, we presume, will contend that the sibbins, or the laanda, or the yaws, or the leprosy, or the plica polonica, are not all of them contagious diseases : Yet the first is only found in Scotland, the second in Africa, the third in the West-Indies, the fourth in Asia, and the last in Poland. The third of them only appears in the low countries, never in the mountains. As to the pretence, that the contagionists admit that the yellow fever is only contagious after a particular degree of heat and *moisture*, it is wholly unfounded.

3. " It is admitted, (the doctor proceeds) that the disease does not spread when the sick are removed from the impure air in which it was contracted. By breathing this impure air, without exposure to the effluvia of the sick, persons are every day attacked ; while, on the contrary, without breathing it, however exposed to such effluvia, no person is attacked. The conclusion, therefore, is irresistible, that the impure air is the cause."

In the first place, we do not by any means make the admission to the extent here stated. On the contrary, in our last, we published a letter from Dr. R. C. Moore, containing a circumstantial account of the deaths of no less than five different persons on Long Island, all of whom received the yellow fever there, in the country, by contagion from the sick who came there ill, from town ; and the narrator himself also received it from a gentleman who took it in town, where it prevailed, and removed into the country, where he was confined " in an airy, well ventilated chamber, surrounded with every comfort which the tenderness and opulence of his parents could bestow."

We shall once more take the liberty of presenting, also, a few cases to Dr. Miller's notice, extracted from his own work, the Medical Repository, vol. 3. p. 8. It is taken from a dissertation, by Lyman Spalding, lecturer on chemistry, &c. &c.

" Since reading the above dissertation, I have seen Dr. Rand's observations to the A. A. S. on the same subject, (yellow fever in Boston in 1798) in which, he seems to think the fever *was not contagious from the diseased*. With due deference to the opinion of so good a man, I must beg leave to add the following cases in support of my former opinion.

" My brother, hearing of my sickness, came twenty miles to my assistance, remained in my chamber almost continually for sixteen days, taking the sole care of me. About two weeks after his return, he was attacked with the fever, no other person within three miles being affected.

" In Windsor, a Miss Bailey was very severely attacked, in the sickly part of the town, three miles from her fathers; an elder sister came to her assistance, and was immediate nurse until she recovered. On her returning home, she was herself attacked, and died. Another sister, who was *her* immediate nurse, and had seen no other person labouring under the disease, nor been in the infected part of the town, was also attacked, and died."

Lastly, we beg leave to present an extract from *Adams' Dissertation*, containing the following facts, as communicated by Dr. William Moore; whose testimony, Dr. Miller will not, we are sure, in common gratitude, dispute; for Dr. Moore was the first gentleman on the list of physicians in this city, who once published a most delectable address to Dr. Miller, for the very memoir on malignant fever, now under review, which they scruple not to declare, " contains a transcript of their best, and most matured professional opinions," and which " presents a view of malignant fever, at once, correct in its principles, solid in its arguments, and perspicuous in its de-

tail." These gentlemen also add, "that they have read the memoir with attention!" which we should certainly be very sorry to think. Perhaps, if they would give the memoir another, and a little more attentive perusal, they would find it neither so "correct in its principles, solid in its arguments, or perspicuous in its detail," as they first imagined, and would see ample cause to regret what they have done. But we are wandering from our purpose. To the ill judged and too inconsiderate panegyric referred to, Dr. Moore was the first to set his hand. Permit us now to introduce this gentleman as a witness against the very object of his public admiration.

"Dr. William Moore, (says Mr. Addoms, p. 7) an eminent physician, of New-York, informed me, that a gentleman from Lime, in the state of Connecticut, was on a visit to this city, when he became a patient of his, in whom the disease was very evidently marked, attended with large vibices; he however recruited considerably before he left the city; on his passage to Lime, he relapsed, and died shortly after he reached home. *The greater part of this family caught the contagion, and soon became affected with a similar disease, which proved fatal to his mother, and some other persons in the family.*" *Addoms' Dis.* p. 7. note.

Now, on the supposition that the inference drawn by Dr. Miller from his fancied premises be correct, it follows irresistibly, if there is truth in logic, that in the cases just mentioned, not the breathing impure air, but exposure to the effluvia of sick persons was the sole cause. But it shall in candour be allowed, that, in the definition in our last of the contagion peculiar to four diseases, of which, yellow fever is one, it is expressly stated, that "these diseases are only, *in general*, communicable through the medium of an impure atmosphere."

Dr. Miller's No. 4 might have more properly found a place under No. 3, and is already answered in our notice

of that number. We will, however, remark, that in his zeal to shew that the disease is only caused by breathing impure or pestilential air, and not by communication with the sick, the doctor has proved too much for himself.

“ In the last epidemic, of 1805, (says he) all the persons occupied in the removal of the sick from the city to the hospital, who, in this service, went without reserve *into the most pestilential quarters of the town, entered the most filthy apartments*, escaped without infection.” This, we presume, is the latest, as it is the most interesting discovery of the non-contagiousness of yellow fever. Here we have evidence, that persons may, with safety, not only expose themselves to the effluvia of the sick, of which, indeed, they had been informed in the preceding page, but that they may likewise walk into the most pestilential quarters of the town, enter the most filthy apartments, and, in short, breathe the most impure air with perfect impunity. We congratulate the public on the discovery announced, for, henceforth, there is nothing to be apprehended from the prevalence of yellow fever ; indeed, there can be no such thing as a prevalence, for, since it can neither be communicated by the effluvia of the sick, according to page 666, nor propagated by a pestilential atmosphere, according to 667, there is nothing to keep this “ inexhaustible poison” alive, and it must inevitably die ; it must violate its own nature, and become exhausted, that is to say, cease to have an existence. One thing only is wanting to render this the most comfortable doctrine in the world, and that is, to be able to believe it.

5. “ The extinction of the disease by cold weather, is an insuperable objection to the doctrine of its propagation by contagion. That the disease in reality depends upon an atmospheric poison, appears from the fact, that all the means which operate to arrest and destroy

it, such as, cold, heavy rains, and high winds, are merely atmospheric agents."

Shall we never be indulged with a single instance of any thing but bare assertion? Will Dr. Miller deal in nothing but a *petitio principii*? It is not true that heavy rains, or high winds, or cold, unless accompanied with actual *frost*, have ever been known to have the least perceptible influence in arresting or destroying the yellow fever, as may be seen by turning to any one of the histories of its prevalence at any place in the United States. Dr. Rush, in the very page that at this moment happens to lie open before us, observes, that in six particular instances, it has declined or ceased only about the middle of October; and he also observes, that in the year 1762 it continued to prevail in the months of November and December, and that the deaths were nearly as numerous in November and December as in September and October.

Dr. Miller has told us in this memoir, that "the pestilential fevers of our cities differ only in grade from the milder remittents of the country."

Let us now see how his argument stands thrown into the form of a syllogism. Remittents and yellow fever, are only different grades of the same disease, and governed by the same laws. The yellow fever is extinguished by frost, therefore, "it depends on an atmospheric poison," and, therefore, again, "cannot be communicated by contagion." The remittent fever is not extinguished by frost, therefore, it depends not "on an atmospheric poison," and, therefore, again, may be communicated by contagion; and, therefore, lastly, is not the same disease. But if it results, that the yellow fever is not a contagious disease, it equally results that the remittent fever is so. We

confess, that if left to ourselves, we should have held the diametrically opposite opinion, viz. that the yellow fever is, and the remittent is not, contagious ; and, we believe, the world holds it with us, and that we are amply supported by facts. The doctor has now, however, proved, that we and all the world have always been wrong, and himself and Dr. Mitchill only right.

“Hot climates and seasons are universally held to be unfavourable to the spreading of contagion. The reason is obvious. In warm weather, the doors and apartments of the sick are kept open, and ventilation is carried to the highest degree.” “But if this disease depended on cold weather, when houses are more closely shut up, it would be then more certainly communicated, and more widely destructive.”

Does Dr. Miller then contend, that the small pox is more certainly communicated in summer, when houses are kept open, than in winter, when they are shut? If he does, we refer him to the first part of this same memoir, where he may see another pleasant sample of self-contradiction.

If any thing more frivolous, more puerile than this, has ever proceeded from any writer of reputation, when engaged in treating didactically a serious subject of controversy, it has totally escaped our observation.

6. “Yellow fever does not prevail in countries where the heat is not sufficient to exhale the miasmata of foul grounds, and other corrupting matters, in the requisite quantity and virulence.”

Will the learned gentleman inform us what is the difference in the comparative degrees of heat, between New-York, and the adjacent villages of Brooklyn, the Wallabout, and Amboy? And if there are none, or none worth mentioning, will he proceed, and inform us how it

happens that all these places have each in turn, but no two at once, experienced the prevalence of the yellow fever? When this is done, then shall we be ready to discuss his sixth reason more fully with him.

7. "Many persons who had contracted the yellow fever in New-York, during the several seasons of its prevalence there, died of it at Boston, Albany, and other cities, at a distance, &c. In no instances did these victims of the epidemic communicate contagion."

This is just what is said in his reason No. 3, and is already answered; but adepts in controversy know that the majority of readers are very apt to believe, that where numerous reasons are set forth in form, something must of course be proved.

8. "The remarkable exemption of physicians from this disease, *provided they attended to a few simple precautions*, is also irreconcilable to the doctrine of its contagiousness."

Why so? But we question the fact here taken for granted. If Dr. Miller will turn to the histories of the yellow fever in 1795 and 1798, he will find no such exemption mentioned there; on the contrary, he will find a numerous account of their deaths; and, on the sad list, some of the most valuable of the faculty, both at Philadelphia and at New-York. Have we not lost all our health officers who attended the quarantine ground? a Treat, a Bayley, and a Ledyard; a Rodgers, (thanks to a gracious Providence, and a good deputy,) still lives for the benefit of himself and family. But this exemption of the physicians, we observe, has a proviso annexed; just a few simple precautions must be attended to. What are they? The doctor, rightly supposing the secret would be eagerly sought after, has very properly and kindly communicated it.

"The more happy escape of physicians in this last than in former epidemics, is to be attributed chiefly to their having secured a residence in the higher and safer parts of these cities, and to the comparative unfrequency of their visits to the districts of envenomed atmosphere."

The "simple precautions," then, is a late thing, and consisted in their taking good care to keep more *out of harm's way*. Truly a very good, as well as a "very simple precaution"! Happy thought, and thrice happy the brain that first engendered it. In vain, however, have we strove to comprehend how this exemption of those physicians, who took such care to keep clear of the disease, is a proof of its non-contagiousness. But supposing this greater exemption of physicians than others, independent of the precaution, we then say, that it must be owing to the same cause that secured exemption to those employed in removing the sick, as mentioned by the doctor a few pages before, who, it seems, could not take the disease one way nor t'other, neither from the diseased, nor from a pestilential atmosphere, in short, they were completely *bomb-proof*, as we say in the army. The doctor adds,

"It is understood, at the same time, that these physicians, in their confidence of the non-contagiousness of the disease, generally spent more time in the apartments of the sick, and were in the habit of making a more deliberate and minute examination of the cases which fell under their care, than in preceding epidemics."

It is apparent that the doctor advances this without feeling any confidence himself in its correctness. It would appear after all, then, that it was those physicians, only, who believed in the non-contagiousness of the disease that were exempted. What egregious trifling!

9. "The failure of every attempt to arrest the progress of the disease, by the separation of the sick from the well, is also incompatible with the doctrine of contagion."

Forever begging the question. Does the writer mean, that the progress of the disease was never arrested by an abandonment of the diseased place? If he does, we must contradict him on that fact. Wherever it has been found practicable to abandon it, as it has been in several villages, the disease has entirely disappeared, and the place might be visited with perfect safety in a few weeks afterwards. Such was the fact at Newburyport, a number of years since; that it was so at the Wallabout, in the year 1804, we were witnesses; the writer of this visited and examined the spot for himself within three weeks, and such has also been the case at Brooklyn. But this is only another instance of that disregard of correctness, that disingenuous artifice, which marks every page of this elaborate essay.

If any thing more is necessary, the doctor shall furnish it himself. In the 8th volume of the Medical Repository, he states, that at the Wallabout the inhabitants abandoned their houses, &c.; and, "in consequence of this, (says he) the disease was suddenly *arrested*." Thus, the effluvia of sick bodies no longer prevailing, the disease disappeared, notwithstanding all the "marsh miasma exhaled by heat, and floating in the atmosphere."

10. "The inconsistency and contradiction which constantly attend the application of the doctrine of contagion in this disease, make it altogether inadmissible. To explain one set of facts, it must infinitely transcend the small pox; to suit another, it must entirely forfeit the power of communicating itself by contagion. On some occasions, it is more subtle, penetrating, and rapid than the electric fluid; on others, more sluggish and dormant than the grossest matter. Contrary to all other noxious substances, it is often more destructive at a distance than near to its source; for, at one time, it cannot reach a single individual among a great number surrounding the bed of the patient, and in frequent contact with his person, while at another, it must strike at the distance of several hundred feet."

We feel ourselves bound to pronounce, that all this is but a tissue of perverse misrepresentation ; and it is difficult to conceive that any mind which could thus descend to the employment of such pitiful artifice, must not be as deficient in correctness of reasoning, as it is in candour. But the singular manner in which the author finishes the paragraph is both absurd and ludicrous.

“ The noxiousness (says he) of the miasma of foul grounds, exhaled by heat, and floating in the atmosphere, explains all these facts; and reconciles all these contradictions.”

So then, after all his attempts to fabricate a mis-statement, which he falsely and ungenerously imputes to his opponents, and then heaps upon it all the ridicule he can command, he acknowledges it to contain sober facts, which he has a theory at hand to explain, and contradictions which the same theory can reconcile. Only allow him his idio and koino miasmata, and he can do what has hitherto been supposed to transcend the powers of man ; he can explain what is inexplicable, and reconcile contradictions.

We have arrived at the end of his ten reasons, but as he seems himself not quite satisfied with them, but goes on with other “ reasons annexed :” we must follow him a little further.

“ If it were necessary to add any thing to the evidence of these irresistible facts, it might be subjoined, that yellow fever cannot be considered as a contagious disease ; because, unlike all other contagious diseases, it has no specific character, no definite course or duration, and no essential or pathognomonic symptom.”

We have in candour to confess, that we are altogether at a loss for language to express our astonishment at this paragraph. Scarcely a writer among the very numerous ones that have treated on the yellow fever, but have begun

by very properly describing the disease, its specific character, definite course or duration, and its pathognomic symptoms. If it were possible to believe, that the learned author had never read, or had forgotten the descriptions of this disease, given by Warren, Moseley, Chisholm, and a score of others, what shall we think of his having totally overlooked his own volumes? his fourteen volumes and nearly three hexades of the *Medical Repository*? a labour in which he has been engaged for no less than fourteen years. Finally, what shall we, what must we think of his having forgotten the beginning of the very essay under review before he had quite reached the end of it? The first volume of the *Medical Repository* opened with two essays, by one of his colleagues, for the express purpose of proving that our yellow fever was the same disease which, in the year 430, A. C., was called the plague, and depopulated Athens. For which purpose, it became necessary to describe, in the first place, what were the pathognomonic symptoms of our yellow fever; and this, again, necessarily obliged him to describe the fever itself minutely, in order that he might identify it with the Athens plague, which he also describes.

“ This disease [the Athens plague] (says he) broke forth suddenly; its attack was generally sudden, commencing without any previous illness or apparent cause. It began with violent head ache, inflammation and fiery redness of the eyes, soon succeeded by inflammation of the throat, difficult respiration, and offensive breath; a sneezing and hoarseness followed, with cough and other pulmonary affections. But the progress and nature of the disease will be more clearly comprehended, from the following disposition of the particular *symptoms*.”

This is followed by an enumeration of no less than ten different symptoms. How far these symptoms go to prove the writer's proposition, we shall not here trouble ourselves to

examine, as it is not necessary to our purpose. They are, at any rate, pertinent to show, that the editors of the Medical Repository, when it suits their views, have no difficulty in admitting the character, duration, and symptoms of yellow fever; and, as we now see, when they have different views, they are equally ready to deny their existence. To come, at once, to the point, we will produce a few extracts from the Medical Repository itself.

We find the doctor engaged in describing the yellow fever in the city of New-York, in 1803, and he has one division of his subject entitled "symptoms," and beginning thus :

"The *phenomena of yellow fever* in this season, did not materially differ from such as heretofore have been observed to *characterise the disease.*" *Med Rep.* vol. 7. p. 180.

And, we find him in another volume of the same work, in an article, entitled "*yellow fever at Cadiz,*" speaking thus :

"We learn that this Spanish disease was precisely such an one as we have lately so often experienced in different parts of our own country. A glance at the *description and symptoms will remove every doubt.*" *Med Rep.* vol. 5. p. 110.

In a letter from Dr. Davidson, on the yellow fever, as it appeared in Martinique, the writer begins a paragraph with observing, that

"A peculiar and distressing oppression about the precordia, was a *pathognomonic symptom* of the disease." *Med. Rep.* vol. 5. p. 245.

Once more, speaking of the yellow fever at Leghorn, as described by GAETANO PALLONI, it is said :

"This disease is described as being one, which, however it might vary in its origin and progress, was *always characterised by the follow-*

ing symptoms: In the beginning, a propensity to vomit; pains in the limbs; a most intense head-ache, more especially in the forehead and temples; a sensation more or less troublesome in the pit of the stomach and the region of the liver; a colour like that of jaundice; and, towards the end, puking a matter resembling coffee grounds; bleedings from the throat and nostrils, hiccuping and convulsions." *Med. Rep.* vol. 8. p. 426.

But this gentleman, now, forsooth, when he has another point to carry, scruples not to tell us, that the yellow fever "has no specific character, no definite course or duration, no appropriate, essential, or pathognomonic symptoms?" Once more, and lastly, let us confront him with himself, in this very essay.

"The *two symptoms* which we supposed to be most characteristic of this disease are, yellowness of skin and black vomiting. A number of passages might be adduced, to shew that Hippocrates frequently met with these symptoms in the diseases that fell under his care; such only will be mentioned as are clear, pointed, and incapable of being mistaken. In the ninth section of his book Crisis, he asserts, that in burning fevers (causus) a yellowness of skin appearing on the fifth day, and accompanied with hiccup, is a fatal symptom! This is a brief, precise, appropriate description of the disease, at one of its most important stages. The appearance of these symptoms at that period, gives reason to apprehend the fatal event, which often takes place soon afterwards, and more frequently on the next, or sixth day, than on any other of the disease. Such a description, it is presumed, can apply to no other febrile disease but that now in question." *Appendix*, p. 661.

Thus, kind reader, in page 661, you have a precise and appropriate description of a disease, and a description which, you are told, can apply to no other but that in question; but, when you have read on to page 670, you will find yourself solemnly assured, that it is totally indescribable; that it has "no specific character." In the former page, you are told, that "the fatal event more frequently takes place on the sixth day than on any other;"

but, in the latter, you are told again, that the disease “*has no definite course or duration* ;” and, lastly, you are first informed, that “*a yellowness of skin appearing on the fifth day, and accompanied with hiccup, is a fatal symptom* ;” but all this you are to forget before you arrive at page 670, last quoted, for there you find, to your utter amazement, that the yellow fever, “*has no appropriate, essential, or pathognomonic symptoms*” [whatever.] The doctor is a little distracted by opposite views : when his object is to show, that the yellow fever is not a modern fever, then the aid of Hippocrates is called in, to prove, by a comparison of symptoms, that the ancient plague of Athens, and the modern yellow fever, is the same disease ; but, to accomplish this, he is necessarily obliged to produce, both a description of *symptoms* belonging to the yellow fever, and, also, to the plague of Athens. On the other hand, when his object is to shew, that all fevers are only different grades of the same disease, he is obliged to turn right about, and deny it has any *symptoms*, or any thing to characterise it ; and this enables him to exhibit, in a style of satin, “*a simplicity, uniformity, and elegant arrondissement* in the doctrine of fevers, which, (he says,) cannot but recommend it to all who admire the regularity of nature.”

The truth is, our good doctor is here involved in an inextricable dilemma : Either the yellow fever is a specific disease, or it is not. If it is a specific disease, its identity with the plague of Athens may be possible, (though he and his colleague have certainly failed to prove it) but then it is no longer a branch of the “*miasmatic diseases*,” and there is an end of his beautiful and elegant *arrondissement* ; if, on the contrary, it is not a specific disease, or a disease *per se*, then he preserves his

arrondissement indeed, at least from being upset by his own theory, but away goes the plague of Athens. We will freely give the doctor his choice, but cannot, in conscience, allow him both at once. Seriously then, we ask, how it was possible for any man maintaining a decent regard for the public, or even a proper self-respect, to entangle himself in such and so many inconsistencies and contradictions?

(To be concluded in our next.)

ART. II. SKETCH of a Plan and Method of EDUCATION, founded on an analysis of the human faculties, and natural reason, suitable for the offspring of a free people, and for all rational beings. By JOSEPH NEEF, formerly a coadjutor of Pestalozzi, at his school near Berne, in Swisserland. Philadelphia, 1808. 12mo. pp. 168.

WE have lately had much pleasure in perusing Mr. Neef's sketch of Pestalozzi's interesting plan of education. This sketch was published by Mr. Neef in the year 1808, and accidentally fell into our hands only a short time since.

The object of the work is to set forth and explain the principles of that system of education, which the sagacity, genius, and benevolence of Pestalozzi unfolded to the world. The beautiful simplicity of the plan, and the clear and accurate display of mental operations connected with it, indicate in Pestalozzi a more than usual acquaintance with the philosophy of mind. A bare examination of the simple principles or elements of the understanding upon which this plan is founded, and the easy gradations by which it proceeds to the complete developement of the

faculties of the mind, was not, however, sufficient to secure its reception. "His motives were applauded, and his plan was admired," but no one was found sufficiently hardy or independent to adopt it; till, after struggling with the numerous difficulties incident to innovation upon established methods, and contending with the host of prejudices that were ready to obstruct the accomplishment of his purpose, he at length succeeded in establishing his system, which was afterwards marked by a progress far surpassing his expectations.

About the beginning of the nineteenth century, Pestalozzi opened a school near Berne, in Switzerland, and about a year afterwards received Mr. Neef as a coadjutor in his new plan of instruction. In 1802, he was requested by the Philanthropic Society of Paris to send them a person acquainted with his method of teaching; and Mr. Neef, from his knowledge of the German and French languages, "was the person selected." About the year 1805, Mr. William Maclure, of Philadelphia, visited Pestalozzi's school, and being greatly struck with its usefulness, formed a desire to diffuse the advantages of such a system of education through his own country. On his return, therefore, to Paris, he sought for Mr. Neef, who, being "republican by inclination and principle," was induced by the generous offers of Mr. Maclure to become "an inhabitant of the new world." At the time Mr. Neef left Paris, he appears to have been perfectly unacquainted with the English language; and yet in little more than two years after, he published his "Sketch of a plan and method of Education," a performance which evinces a very rare facility in the acquisition of a foreign tongue.

Believing, with Pestalozzi, that man is originally formed neither virtuous nor vicious, but that the tendency

servants' room and with the cabin : on the left hand is a large bar room. In front of this cabin is a forecastle, with births for the use of the seamen. The whole number of beds for passengers is one hundred and four, besides those for the accommodation of the captain, officers, seamen, and servants. The births are so wide as conveniently to admit of two persons, when the boat is crowded, and it is agreeable to the parties. The cabins, besides side windows, are lighted by large sky lights so as to be perfectly airy, and are elegantly furnished with carpets, looking glasses, &c. The meals are served in china. Every upper birth, except a few near the wheels, has a large window, and each has a shelf for the reception of the hat and clothes of the person that takes it. The curtains, which are of fringed muslin with silk drapery, are so contrived that the cornice to which they are fixed draws out, and thus forms a little closet in which a person may dress without being seen from the cabin. On the out work that defends the wheels, and which projects both before and behind them, are staircases to descend into a boat ; wells for fish, and necessities ; bins for fuel, which is never suffered to encumber the decks that are left free for passengers to walk, under awnings that cover almost the whole vessel. The average time of a passage to Albany, (a distance of 160 miles) is thirty hours ; but it is proposed so to enlarge the engines of the *Paragon* and *Car of Neptune*, which are strongly built for the purpose, as to perform it the next summer in twenty-seven hours. A singular advantage of this vessel is, that being built principally of red cedar and pine, and very strongly timbered, and carrying no ballast, were she to fill with water, the passengers would incur no danger, the timber being more than sufficient to float all her weight.

Her length and width, with the small proportion of sail she carries, renders it impossible she can overset ; so that to ease, elegance, and speed, this vessel unites the most perfect safety.

V.

A new CLASSIFICATION of DISEASES, proposed by
 DAVID HOSACK, M. D. *Professor of the Theory and*
Practice of Physic and Clinical Medicine, in the Uni-
versity of New-York.

CLASS. I.—FEBRES.

ORD. I.—INTERMITTENTES.

- | | |
|----------------|--------------|
| 1. Quotidiana. | 3. Quartana. |
| 2. Tertianæ. | |

ORD. II.—REMITTENTES.

4. Remittens Biliosa.

ORD. III.—CONTINUÆ.

- | | |
|--------------------------|-------------------------|
| 5. Synocha. | 8. Pestis Orientalis. |
| 6. Typhus vel Synochus. | 9. Pestis Occidentalis. |
| 7. Dysenteria Epidemica. | |

CLASS. II.—PHLEGMASIÆ.

- | | |
|---------------------------|------------------------|
| 10. Phlogosis. | 25. Peritonitis. |
| 11. Phrenitis. | 26. Gastritis. |
| 12. Ophthalmia. | 27. Enteritis. |
| 13. Otitis. | 28. Hepatitis. |
| 14. Odontitis. | 29. Splenitis. |
| 15. Catarrhus. | 30. Nephritis. |
| 16. Cynanche Tonsillaris. | 31. Cystitis. |
| 17. Cynanche Maligna. | 32. Urethritis. |
| 18. Cynanche Trachealis. | 33. Hysteritis. |
| 19. Cynanche Pharyngea. | 34. Phlegmasia dolens. |
| 20. Mastodynia. | 35. Rheumatismus. |
| 21. Pertussis. | 36. Podagra. |
| 22. Pneumonia. | 37. Arthropoiosis. |
| 23. Phthisis Pulmonalis. | 38. Hydarthrus. |
| 24. Carditis. | 39. Periostitis. |

CLASS. III.—CUTANÆI.*

ORD. I.—PAPULÆ.

- | | |
|-----------------|--------------|
| 40. Strophulus. | 42. Prurigo. |
| 41. Lichen. | |

ORD. II.—SQUAMÆ.

- | | |
|----------------|-----------------|
| 43. Lepra. | 45. Pityriasis. |
| 44. Psoriasis. | 46. Ichthyosis. |

ORD. III.—EXANTHEMATA.

- | | |
|-----------------|---------------|
| 47. Rubeola. | 50. Roseola. |
| 48. Scarlatina. | 51. Purpura. |
| 49. Urticaria. | 52. Erythema. |

ORD. IV.—BULLÆ.

- | | |
|-----------------|----------------|
| 53. Erysipelas. | 55. Pompholyx. |
| 54. Pemphigus. | |

ORD. V.—PUSTULÆ.

- | | |
|---------------|--------------|
| 56. Impetigo. | 59. Scabies. |
| 57. Ecthyma. | 60. Porrigo |
| 58. Variola. | |

ORD. VI.—VESICULÆ.

- | | |
|----------------|---------------|
| 61. Herpes. | 64. Miliaria. |
| 62. Varicella. | 65. Eczema. |
| 63. Vaccinia. | 66. Aphthæ. |

ORD. VII.—TUBERCULA.

- | | |
|----------------|--------------------|
| 67. Phyma. | 71. Acne. |
| 68. Verruca. | 72. Lupus. |
| 69. Molluscum. | 73. Elephantiasis. |
| 70. Vitiligo. | 74. Frambæsia. |

ORD. VIII.—MACULÆ.

- | | |
|--------------|-------------|
| 75. Ephelis. | 77. Spilus. |
| 76. Nævus. | |

CLASS. IV.—PROFLUVIA.

ORD. I.—HÆMORRHAGIÆ.

- | | |
|------------------|------------------|
| 78. Epistaxis. | 82. Hæmaturia. |
| 79. Hæmoptysis. | 83. Hæmorrhoids. |
| 80. Hæmatemesis. | 84. Menorrhagia. |
| 81. Hepatirrhœa. | |

* In this class, Dr. Willan's lucid arrangement of cutaneous diseases is adopted.

ORD. II.—APOCENOSES.

- | | |
|-------------------|-----------------|
| 85. Ephidrosis. | 91. Diarrhœa. |
| 86. Epiphora. | 92. Dysenteria. |
| 87. Otitrhœa. | 93. Diabetes. |
| 88. Ptyalismus. | 94. Enuresis. |
| 89. Galactirrhœa. | 95. Leucorrhœa. |
| 90. Cholera. | 96. Gonorrhœa. |

CLASS. V.—SUPPRESSIONES.

- | | |
|----------------------|--------------------------|
| 97. Icterus. | 102. Amenorrhœa. |
| 98. Obstipatio. | 103. Dysmenorrhœa. |
| 99. Ischuria. | 104. Suppressio mensium. |
| 100. Dysuria. | 105. Dysiochia. |
| 101. Dyspermatismus. | 106. Agalactia. |

CLASS. VI.—NEUROSES.

ORD. I.—PARALYSES.

- | | |
|---------------------|------------------|
| 107. Apoplexia. | 115. Anosmia. |
| 108. Paralysis. | 116. Agheustia. |
| 109. Amaurosis. | 117. Aphonia. |
| 110. Dysopia. | 118. Paraphonia. |
| 111. Pseudoblepsis. | 119. Psellismus. |
| 112. Strabismus. | 120. Dysphagia. |
| 113. Dysecœa. | 121. Anæsthesia. |
| 114. Paracusis. | |

ORD. II.—ADYNAMIÆ.

- | | |
|-----------------|--------------------|
| 122. Asphyxia. | 126. Bulimia. |
| 123. Syncope. | 127. Satyriasis. |
| 124. Dyspepsia. | 128. Nymphomania. |
| 125. Pyrosis. | 129. Anaphrodisia. |

ORD. III.—SPASMI.

- | | |
|---------------------------------------|--|
| a. <i>In functionibus Animalibus.</i> | b. <i>In functionibus Vitalibus.</i> |
| 130. Tetanus. | 137. Palpitatio. |
| 131. Trismus. | 138. Angina Pectoris. |
| 132. Dolor faciei. | 139. Asthma. |
| 133. Tremor. | c. <i>In functionibus Naturalibus.</i> |
| 134. Convulsio. | 140. Colica. |
| 135. Chorea. | 141. Nephralgia. |
| 136. Epilepsia. | 142. Hysteralgia. |
| | 143. Hysteria. |
| | 144. Hydrophobia. |

ORD. IV.—VESANIÆ.

- | | |
|-----------------------|-------------------|
| 145. Amentia. | 148. Mania. |
| 146. Melancholia. | 149. Oneirodynia. |
| 147. Hypochondriasis. | |

CLASS. VII.—CACHEXIÆ.

ORD. I.—INTUMESCENTIÆ.

- | | |
|---------------------|--------------------------|
| a. <i>Adiposæ.</i> | 157. Hydrothorax. |
| 150. Polysarcia. | 158. Hydrops Pericardiæ. |
| b. <i>Flatuosæ.</i> | 159. Ascites. |
| 151. Pneumatosis. | 160. Hydrops Ovarii. |
| 152. Tympanites. | 161. Hydrometra. |
| 153. Physometra. | 162. Hydrocele. |
| c. <i>Aquosæ.</i> | 163. Hydrops Articuli. |
| 154. Anasarca | d. <i>Solidæ.</i> |
| 155. Hydrocephalus. | 164. Phyesonia. |
| 156. Hydrorachitis. | |

ORD. II.—VITIA.

- | | |
|------------------------|---------------------------|
| 165. Atrophia. | 170. Syphilis. |
| 166. Rachitis. | 171. Sibbens. |
| 167. Mollities Ossium. | 172. Scorbutus. |
| 168. Lithiasis. | 173. Petechiæ sine febre. |
| 169. Scrophula. | 174. Plica Polonica. |

CLASS. VIII.—LOCALES.

ORD. I.—DYSÆSTHESIÆ.

175. Caligo.

ORD. II.—TUMORES.

- | | |
|-------------------|------------------------|
| 176. Aneurisma. | 182. Sarcoma. |
| 177. Varix. | 183. Fungus Hæmatodes. |
| 178. Ecchymoma. | 184. Polypus. |
| 179. Schirrus. | 185. Lupia. |
| 180. Carcinoma. | 186. Ganglion. |
| 181. Bronchocele. | 187. Exostosis. |

ORD. III.—ECTOPIÆ.

- | | |
|-----------------|---------------|
| 188. Hernia. | 190. Luxatio. |
| 189. Prolapsus. | |

ORD. IV.—DIALYSES.

- | | |
|--------------|-------------|
| 191. Vulnus. | 192. Ulcus. |
|--------------|-------------|

ORD. V.—DEFORMITATES.

R E V I E W.

ART. I. *An APPENDIX to Thomas's Practice of Physic,*
by EDWARD MILLER, M. D. *Professor of the Prac-*
tice of Physic in the University of New-York. New-
York. Collins and Perkins. 8vo. pp. 697. 1811.

(Continued from page 189.)

We hasten to conclude our Review of this extraordinary Appendix.

We have examined and disposed of Dr. Miller's ten cogent reasons why the yellow fever is not and cannot be a contagious disease: but our task is not yet finished; for, to these ten reasons the doctor has annexed various additional reasons, under separate heads, which must be examined and disposed of also. In our last we have already made some progress, in considering these, and an observance of order brings us now to his question, "*Can the yellow fever be imported and exported?*" The negative, he says, may be indubitably maintained for several reasons.

1. "*The non-contagiousness of the disease, if admitted, must entirely destroy the belief of its introduction from abroad,*" &c.

True. Nobody doubts that. But as, instead of being *admitted*, it happens to be the identical question in issue, it would strike us unaccountably strange to find an admission taken for granted, had we not so often before met with similar conduct on the part of Dr. Miller: it is the doctor's great reliance throughout this controversy; and entitles that gentleman at least to the character of a bold sophist.

2. "If the alleged importation were possible, in any case, it might happen at any season of the year. In the active sea-ports of the United States, shipping from the West-Indies are very frequently arriving at all seasons; and it is known that the yellow fever may be found in those islands at any period of the year."

In this second reason, the doctor is, we fear, equally unfortunate as in his first. If the reader will turn back six pages, he will find the doctor answering himself; for he there says that, "*the extinction of the disease by cold weather is an insuperable objection to the doctrine of its propagation by contagion.*"* If so, if the winter extinguishes the disease, it seems hardly fair to expect us to prove that it propagates it also, or to give up the doctrine of importation. But, notwithstanding the doctor's assurance, we think it still remains for him to explain, how the extinction of the disease by the cold of winter proves it cannot be imported during the heat of summer. His argument is this; its importation is not possible in summer, (when the requisite degree of atmospheric heat prevails) because it never happens in winter, (when the requisite degree of atmospheric heat is absent.)

3. "If the yellow fever could be introduced from abroad, it is impossible to explain its non-appearance in the United States for a long series of years, when no means were used to secure its exclusion. For more than fifty years preceding 1795, no importation of the disease into the city of New-York was suspected."

* After all the stress laid by Dr. Miller on this argument, arising from "*the extinction of the disease by cold weather,*" is it not a little singular, to find this gentleman furnishing us with a case in the Medical Repository, vol. 9. p. 395, as communicated by Dr. V. Seaman, directly in the teeth of his own doctrine? This case happened in January 1806, when "the earth was locked up by frost and covered with snow." We mean not, however, to claim any advantage from this case, for, from Dr. Seaman's own description, it is very clear it was a case, not of yellow fever, but of ordinary typhus.

What? Is it indeed so, that for more than fifty years together, New-York has been entirely free from yellow fever, and yet its air be a "*local, stationary,*" and "*inexhaustible poison?*" that it be subject to constant "*exhalations from masses of filth and corruption, overspreading a large area of ground, forming a vast hot-bed of putrefaction, INCESSANTLY teeming with miasmata, and thereby, in despite of currents of air, loading with the seeds of disease every successive portion of the atmosphere that sweeps or stagnates over the pestilential surface,*" [engendering yellow fever?] Has this always been the case with the inhabitants of this ill-fated city, and yet have they, for more than fifty years together, never once been visited by yellow fever? Have they, then, for such a long period respired "*currents of air loaded with the seeds of disease,*" and yet remained exempt from it? Has "*every successive portion of atmosphere*" they breathed, been thus contaminated, and yet have they not been aware of it for fifty years together? Has "*a vast hot-bed of putrefaction, incessantly teeming with miasmata,*" been the soil they have, all this time, inhabited? Has a "*pestilential surface*" formed the ground under their feet for upwards of half a century? Has a "*local, stationary, and inexhaustible poison*" constituted the climate in which they have lived, moved, and had their being, and yet have generation passed away after generation, without this "*terrible scourge of yellow fever*" being ever known and felt by any mortal man among them, until up rose Dr. Edward Miller to inform them of their direful misfortune, and to assure them that they "*LIVE IN THE LATITUDE OF PESTILENCE?*"* But before Dr. Miller can make his

* Vide Dr. Miller's first edition of the essay under consideration, as originally published in a letter addressed to Gov. Lewis, in 1805.

deduction that the yellow fever's not being imported from the West-Indies during the period of fifty years, is evidence that it is not importable from thence, is it not, in fair argument, incumbent on him first to show, that during that period, and its great occasional mortality, it was not the common fever of the climate, but the pestilential yellow fever, that proved so fatal in the West-Indies? He mentions, indeed, several instances of great mortality among the English troops there, and he says that thousands of sick were landed in New-York; but let him produce any one medical writer of the day who denominates that sickness the yellow fever, or whose description of its pathognomonic symptoms shows it to have been such. If not the yellow fever, he is certainly entitled to no such inference as he has drawn. But, on the other hand, if, as he says, our climate, itself, is "*the latitude of pestilence*;" if this ruinous charge which he has brought against our city, be well founded, and there be any truth in the axiom that like causes produce like effects, let him account to us, if he can, by what magic or miracle it was, that the course of nature was arrested in its operations for more than fifty years; during part of which period, namely, the revolutionary war, the city of New-York was not once swept or in any way cleaned for seven years; the streets being the receptacles of carrion, spoilt vegetables, and thereby rendered one mass of filth? Or will Dr. Miller, in order to escape from one difficulty, plunge headlong into another, and say the mortal diseases of the West-Indies above spoken of must have been yellow fever, because all febrile diseases, whether bilious or remittent, by a happy "*arrondissement* in the doctrine of fevers," are the same? "The pestilential fevers of our cities differ only in *grade* from the bilious and remittent fevers of the country." This is,

indeed, all that is left to be said ; but this opens the way for a question of some importance to the doctor and his party, and his answer must be a decisive one. We ask you then, sir, whether, when you allow that the yellow fever did not appear in the sea-ports of the United States for more than fifty years, you mean to be understood as saying, that during this length of time neither remittent nor intermittent fever made their appearance ? An answer in the affirmative would discover an ignorance of facts not to be suspected, and therefore we shall suppose you to answer, without hesitation, in the negative. If so, we only desire you to remember, that, in the very essay under consideration, you have assigned as one reason to prove the yellow fever is not contagious, that "*it has no specific character, no definite course or duration, and no appropriate, essential, or pathognomonic symptom.*" How then, we ask, can you, or any other man who thinks as you do, know the disease when you see it ?

4. "*No importation of this disease, so as to become epidemic, was ever known in any part of Great-Britain, Ireland, or France.*"

This is admitted ; and what then ? The Doctor himself shall solve the difficulty. Let us once more turn back half a dozen pages and see what he says there. "Yellow fever does not prevail in countries where the heat is not sufficient to exhale the miasmata of foul grounds and other corrupting matters in the requisite quantity and virulence. We hear nothing of this disease in Great-Britain, Ireland, or France." "For want of the atmospheric heat and other circumstances requisite in the generation of yellow fever, they are happily exempt from its epidemic prevalence." All very well ; but how

this proves that the yellow fever cannot be brought from the West-Indies into the United States, where there is no 'want of atmospheric heat,' we are altogether at a loss to comprehend. This argument seems to be a-kin to that which infers that the yellow fever cannot be brought hither in the heat of summer because it cannot exist in the cold of winter, and that, because it cannot exist in the cold of winter, therefore it cannot be brought hither during the heat of summer: thus affording a pregnant example of what logicians call reasoning in a circle.

5. "*The appearance of the yellow fever in the interior parts of the country, inaccessible to foreign contagion, confirms the opinion of its domestic origin, while it entirely invalidates that of its importation.*"

Certainly: The appearance of the yellow fever in the interior of the country would completely invalidate the opinion of importation. Once produce a case, a single case of yellow fever, in any interior part of the country, inaccessible to importation, and unvisited by newly arrived passengers or sailors, and it shall be granted that there is an end to the question. We fearlessly venture, however, to assert, that no such case ever yet existed; certainly no such case is to be found in the volumes or hexades of the Medical Repository; and if not, we think we may, without apprehensions of contradiction, deny their existence; for it is utterly incredible, that such a case could exist, and yet elude the never ceasing and unlimited researches of the zealous partisans who conduct that learned work.

We take it to form a correct test by which to judge of the nature of a disease, to inquire into the treatment employed; similar remedies generally indicating similar diseases, and vice versa. The editors of the Repository, in proof of their assertion that the epidemic fevers of the interior parts of the country are no other than our yellow fevers

of the city, have produced several letters from medical gentlemen and others, which they have published, and on which they entirely rely. Many of these letters, we admit, hesitate not to declare the same opinion, but on examination it will be found that while they pronounce one doctrine they prove another. They certainly confess that the remedies they have employed with success were "*emetics, followed by the bark and tonics.*" Now, every physician conversant with yellow fever, knows that this treatment of that disease would prove certain and immediate death. We find it also stated in a letter to Dr. Hosack, as found in "Barton's Medical and Physical Journal," that "the general duration of the lake fevers may be said to be about nine days," and that "when the disease proves fatal, it is, in general, on or about the twentieth day." Is it still seriously contended that this is the yellow fever of cities?

But what shall we say to the following passage taken from the fourth volume of their work?

"The plague of Asia, like the yellow fever or pestilence of our own country, is a disease which delights in the devastation of populous cities. Perhaps *neither of these calamities has ever been known to originate, as an epidemic, in villages or country situations.*" Vol. 4, p. 403.

This is the language of Dr. Caldwell of Philadelphia, one of their most zealous and certainly most able partisans.

6. "*A comparison of the summer of the year 1804, with the corresponding season in 1805, the period of the last epidemic at New-York, will go far to show the dependence of the yellow fever on the condition of the atmosphere, and of course to overthrow the doctrine of importation. The summer of 1804 was mild and cool to a remarkable degree, on all the Atlantic coast of the United States, lying to the northward of the Carolinas.*" "*All the Atlantic cities north of the Carolinas, without exception, entirely escaped the epidemic that season.*"

We observe that the writer, in the latter sentence, makes use of the word *cities*, "all the Atlantic *cities*;" but, as in the fore part of the quotation, he sets out with a general proposition, embracing "*all the Atlantic coast*," when he afterwards says "all the Atlantic *cities* north of the Carolinas," we are authorized to understand the words as no more than a repetition of the former assertion a little varied, but equally extensive in meaning. To suppose any thing else, would be to suppose a miserable quibble, and would make the latter part of the sentence incongruous with the former. We understand Dr. Miller, then, as saying, that in the summer of 1804, "all the Atlantic coast of the United States, north of the Carolinas, without exception, escaped the disease." This escape he accounts for, by telling us, that it was owing to the remarkably mild and cool summer of that year; and this single circumstance, he says, goes far "*to show the dependence of the yellow fever on the condition of the atmosphere; and of course, to overthrow the doctrine of importation.*" How far the facts, when investigated and established, will go to show "the dependence of the yellow fever on the atmosphere," may not, perhaps, be so very clear; but that they go far, very far indeed, to show how little dependence can be placed on the correctness of Dr. Miller's statements, or the legitimacy of his conclusions, shall presently be made to appear.

When the impartial reader comes to peruse the following very particular account of the epidemic which raged at the Wallabout, in the summer of the very year 1804; a summer which we see so highly commended for its remarkable coolness and mildness, and during which, therefore, it is asserted, no yellow fever appeared on "*all the Atlantic coast northward of the Carolinas*;"

when, we repeat, he comes to read the account which follows, what will be his surprise, his astonishment? As this is one of the most leading cases ever known, and one of the most satisfactory that can be imagined, to prove the importation and contagiousness of the yellow fever, we shall take the liberty of giving the particulars and the evidence at full length, as furnished by the editor of the New-York Evening Post at that time. We begin with the ensuing article, taken from that paper of September 11, 1804.

“ Epidemic at the Wallabout:

“ Being of the number of those who view the question, whether the yellow fever is imported into the United States, as one of the most interesting that can occupy the attention of this community, deeply involving the lives and fortunes of its members, it would be affectation to apologize for devoting a few columns to its investigation. It will be allowed, that if a single instance can be produced and authenticated, in which the disease has been introduced from abroad by means of vessels, it will be decisive of the question: that instance I now offer to produce and authenticate.

“ In June last several persons living at the Wallabout were attacked with the yellow fever; from these it was communicated to others, in all seventeen, of whom eight died; after which it ceased, in consequence of the removal of the inhabitants. For the information of the distant reader it is proper to observe, that the Wallabout is a little hamlet situate on the eastern shore of the East river, which divides the city of New-York from Long-Island, and consists of eight dwelling houses and two or three out-houses, the distance between the two extreme houses being about one third of a mile. The situation, soil, and circumstances of the place will more particularly appear

from the affidavits that are to follow, accompanied by the letter of John Jackson, Esq. who is the proprietor of the soil. The following is a correct statement, obtained from the inhabitants at the Wallabout, of the manner in which the disease showed itself, and the order of the cases.

Isaac W. Brown, Edward Livingston, Samuel White, James Castles, and Mrs. Little, (since dead,) on the 20th of June : Mrs. Little died on the 24th or 25th, the rest recovered.

Philip Dring sickened the 21st, died the 23d.

Mrs. Sherlock sickened the 22d, died the 28th.

Jane Johnson sickened the 23d, died the 27th.

Mrs. Dring sickened the 30th, recovered.

Sally Wakeman sickened the 29th or 30th, died July 3d.

William Arbuton sickened the 28th, died at the Marine Hospital July 3d.

Benjamin Rhodes sickened the 29th, recovered.

George Little, Mrs. Gentridge, (who laid out Mrs. Little) and Patty Helme, sickened the 30th, all recovered.

— Helme sickened July 1st, recovered.

Patrick Proffer was a labourer who took the fever at the Wallabout, day unknown, came over to New-York, and after laying sick some days, recovered ; after which his case was made known in the Medical Repòsitary.

After five days from the removal of the brig *La Ruse*, no new case of fever appeared.

The above will furnish a sufficient description of the patients for the present. The letter and affidavits will supply all the reader can want to know further.

“ On the evening of the 28th of June, I met Dr. Hosack in Wall-street, who informed me that the yellow fever had unquestionably appeared at the Wallabout, and that he had that day seen a man in this city, at No. 40 Pearl-

street, labouring under clearly marked symptoms of the disease, but which the Resident Physician (Dr. Miller) had pronounced to be only an ordinary cold ; that this man, although his habitation was here, was a labourer at the Wallabout, and had slept in the very house out of which a woman had been buried, having died of the fever ; desiring me to make a memorandum of the conversation, which I did. The next morning I saw Dr. Hamersley, Dr. Stringham, and Dr. Gamage, who informed me they were going over to the Wallabout for the sole purpose of examining into the facts, and making a statement of them.

“ A statement of facts was accordingly made by them from minutes taken on the spot ; which they immediately sent to his honour the Mayor. The statement of these gentlemen it is not necessary to repeat, because one more in detail is now to be presented ; it was substantially correct ; in one or two particulars incorrect, but on the whole as near the truth as could be expected for the short time they were at the place collecting it ; and in my opinion the public are highly indebted to them for the duty they voluntarily undertook, and which, had it only been persisted in, with spirit and firmness, to the end, would have given them very extensive claims on our gratitude. For, had they not have gone to the Wallabout at the time they did, I very much suspect we should not have been more fortunate in coming at the truth in this, than in former instances.

“ As was foreseen, the Health Officer appeared in the very next Citizen in a full length vindication of his official conduct, and controverting the statement of the three physicians throughout. This vindication was published in this paper of July, but as it is now to be subjected to an examination, it may be convenient to bring it to

the readers recollection by a short summary of its contents.

“ After complaining of ‘ the misrepresentations of facts, distortion of truths, and malignant reflections,’ which had been made on the occasion ; and after a pertinent and proper approbation of the quarantine laws, Dr. Rodgers proceeds to state the situations of three vessels which lay at the Wallabout ; to wit, the schooner Union, schooner Greyhound, and the brig La Ruse. With the first I have nothing to do, and therefore dismiss her at once.

“ The Greyhound, he says, was from Cape-Francois, ‘ her cargo, coffee, in a very sound condition,’ ‘ she was also cleansed, her bilge-water completely pumped out, and the water from the pump completely clear and free from smell.’

‘ The brig La Ruse arrived June 4th, from Guadeloupe, in stone ballast, and light. Her crew consisted of six in perfect health ; four passengers, all well. She lost one man on the homeward bound passage, (the cook) whose complaint was declared by the physician at his arrival, to have been inflammatory, and not to have partaken of the nature of yellow fever at all.’ ‘ The brig at this time was clean, she was free between decks, nothing in her hold but stone ballast, and this free from smell, and apparently very clean ; she had never been sickly, or in such a situation as to have given mistrust.’ ‘ Captain Chamming's declares the hatches were closed the first six days after her arrival at the Wallabout, that he was the first person that opened them, and went down directly into the hold, that he did not perceive *any disagreeable smell at all*, nor was *in the least* incommoded.’ ‘ The ballast on board the La Ruse was *dry* clean stones,’ &c.

‘ Dr. Bailey went up by my direction on the 25th ult. to know the state of the vessels in the Wallabout ; he found them in such a situation as to warrant him in saying that no evil could *possibly* have arisen from them.’ ‘ La Ruse hauled first to the navy-yard, where she lay till the 23d of June, when she moved to the wharf, opposite to the house where a woman sickened on the 20th and died on the 24th or 25th. She lay there without discharging her ballast or even touching it till the 25th.’ ‘ Upon the whole, I am confident no evil has arisen from La Ruse at any one time.’ ‘ I can and do declare that no vessel has passed to the city of New-York from any place where malignant fever prevailed at the time of her departure, since I have been health officer.’ ‘ All the ports from which the vessels now in the Wallabout, or which have been there since the first of June, sailed, were at the time of their departure, in great health.’— ‘ Edward Livingston and another man from the Wallabout, labourers at the saw-pits, but not on board any vessel there, have been admitted into this hospital with malignant fever, and are recovering ; neither of them had ever been on board the La Ruse.’ He then refers the Mayor, to whom the letter is addressed, to Dr. Miller, the resident physician, as being a person better able to give an account of the misfortune at the Wallabout than himself ; and concludes with some reflections on the conduct of the three physicians, accusing them of having been either purposely vague, and therefore disingenuous and uncandid, or with being guilty of reprehensible neglect in omitting to state material circumstances.

“ Such are the leading contents of the letter of the health officer ; and, if it shall appear that he is so very unfortunate as to have been mistaken in all the leading par-

ticulars that he has thus stated, the detection will not, we hope, be chargeable to a wish on my part to distort the truth, nor to 'a misrepresentation of facts,' nor the 'malignant reflections' of the three physicians.

"As to the Resident Physician, to whom he refers as being more competent to furnish an account of the affair than himself, that gentleman has given his account in print. It has appeared in several of our morning papers and shall be republished in this to-morrow. It is hereafter to be shown that the Resident Physician has been equally unfortunate in his facts as the Health Officer."

In confirmation of the above statement, the following appeared the next day, taken from the Medical Repository for July.

"Malignant disease at the Wallabout.

"About the twentieth of June cases of the malignant fever suddenly appeared at the Wallabout, on Long Island, at Mr. Jackson's ship yard, near the navy yard of the United States: where a large number of ship carpenters and other labourers were collected, and where ship building is carried on to a considerable extent. The East river separates this place from the city of New-York.

"Of the persons attacked with this disease, eight are said to have died; two of these, however, are believed, by many, to have been affected by other disorders. Two labourers were seized with it soon after quitting the ship-yard and making their way into this city; one of them recovered, and the other died at the Marine Hospital, where he had been sent as soon as symptoms of decided malignity came on.

"Difference of opinion, as usual, arose concerning the origin of this disease; some ascribe it to imported contagion, or the foul condition of certain vessels recently arrived; others to the accumulated filth and crowded state of the dwelling houses at the ship-yard.

"The vessels charged with the importation of the contagion were the brig *La Ruse* and the schooner *Greyhound*; the former from *Guadaloupe*, the latter from *Cape-Francois*. It appears, from incontestible evidence laid before the public by the health officer of this port, that the vessels in question came from ports which were in a very healthy state; that no malignant disease had occurred on their passage; that on their arrival here they were completely cleansed by ventilation, washing, white-washing, &c.: that the clothing, bedding, &c. of the crews had been carefully ventilated and washed; and that particularly the lime-stone ballast of *La Ruse*, which afterwards became the object of some ridiculous suspicions, had been perfectly

washed as it lay in the hold of the brig, while she rode quarantine, by repeated taking in and discharging water in great quantities from along side.

"Notwithstanding this remarkable, and, as it may possibly be thought by some, excessive scrupulousness in the health officer, many reports of the uncleanness in these vessels were industriously circulated. It was asserted, in particular, that the disease appeared after the discharge of the ballast from the brig *La Ruse*, which was just mentioned; but it is ascertained that three or four of the worst cases commenced before this ballast was moved. It was likewise asserted, that the crew of *La Ruse* went ashore to the grocery store of Mr. Little, in whose house one of the first cases occurred, to purchase such things as they wanted; this, however, is positively contradicted by the testimony of Mr. Little himself, who declares (and whose certificate has been published) that no seaman or other hands from the brig had come to his house, or held any communication with his family, while she lay at the Wallabout. It was further asserted that the brig in question lay close to the house of Mr. Helme, in which one of the most malignant cases commenced on the 20th of June: whereas there is the best evidence that this vessel lay at the navy yard of the United States, a distance of more than *one hundred and fifty* yards from the spot referred to, until the 23d of the month, when she moved to the wharf near to Mr. Helme's house, a day or two *after* some of the malignant cases had commenced. It would occupy too much of our time to mention and refute several other glaring misstatements concerning those vessels, which were collected and laid before the public with all the confidence of the most authentic facts.

"It does not appear that a single person of those attacked with this malignant fever had been on board either of the vessels charged with the importation of it, or held any communication with them, or any thing belonging to them. On the contrary, many persons, generally from five or six to seventeen or eighteen in number, were on board of the brig *La Ruse*, for the purpose of repairing her, from the time of her arrival till her departure from the Wallabout: not one of whom suffered any sickness. On board of the *Greyhound*, whose bilge-water was said to have been offensive at a particular time, and which on that account, became an object of suspicion, there lived a family, consisting of a man, his wife, and several children, who all enjoyed perfect health while the sickness was prevailing on shore. To believe that these vessels could emit noxious effluvia to such a distance on shore, while, at the same time, so many persons on board of them remained in the best health, is to admit the incredible supposition that such effluvia are less pernicious in their concentrated state, near their source, than being greatly diffused and diluted in the atmosphere. Besides, Mr. Middleton, with his family, lived nearer to the wharf where the suspected vessels lay than either Helme or Little; yet they all continued in perfect health, which must have been owing to their not being at all crowded, a circumstance very material, as will be presently seen, in the condition of the other families. It deserves also to be mentioned, that a large proportion of all the victims to this disease, and some of the earliest, were women,

whose occupations did not lead them to the wharves, who were employed within doors, and who had not been concerned in washing seamen's cloths, or in any intercourse with them, which could account for the communication of the disease.

"But while the most decisive facts show that the disease in question could not have originated from either of the suspected vessels, or from any foreign source whatever, the local circumstances of the ship-yard itself, together with the condition of the inhabitants, will be found sufficient to satisfy any reasonable inquirer that the mischief was generated there.

"A very high and steep bank, beginning a few feet from the houses inhabited by the sick, effectually deprive persons residing there of the benefit of all refreshing breezes from the south and south-west. The principal houses are so situated, with their rears to the eastward on the line of the navy-yard, that, for want of doors and windows on that side, they almost entirely exclude the north-east, east, and south-east winds. Two ships on the stocks, surrounded by their scaffolding, together with large quantities of timber deposited in different situations, prevented, in a great degree, the approach of currents of air from the west and north-west. From these circumstances it results, that the only wind which had free access to the ship-yard, or could ventilate it with any effect, was a north wind, which seldom blows during the hot season. The effect of these circumstances was strongly felt and acknowledged by the inhabitants of the place, who described, in striking terms, the unfavourableness to a free circulation of air, and their sufferings in consequence of the very hot and stagnant air they were obliged to breathe.

"The boarding-houses allotted to the numerous workmen at this ship-yard were excessively crowded. The number of lodgers stowed in single rooms was, in several instances, so large, that great danger must have resulted from this source, in a situation ever so favourable on other accounts. In one instance, it is asserted that nine labouring men, with their bedding, &c. were obliged to pass their nights in a room about ten or twelve feet square, with only one window or door. In several other cases which have been distinctly related, the degree of crowding was nearly as great. There was but one instance of a family at this ship-yard enjoying the comfort of apartments sufficiently spacious and commodious in proportion to their number; and these all preserved good health, while the neighbours around them were sickening and dying.

"The quantity of vegetable and animal filth overspreading the ground, and lying about the boarding houses, taken in connection with the other circumstances of the place, was sufficient to generate great mischief. No plan of properly cleansing the yard seems ever to have been adopted; of course this filth has been progressively accumulating, and becoming more dangerous ever since the establishment at this place was first undertaken.

"The number of persons at this place was sufficient to carry on the work of building two large ships, and of occasionally repairing others. Yet these workmen did not possess the convenience of a privy, the want of which must have added exceedingly to the other sources of the accumulation of filth. When all these facts are considered in

connexion with the local circumstances of the spot, which rendered ordinary ventilation impossible, it will not appear strange that a malignant disease should have been generated at this place. There would be no reason to resort to the vessels for the source of mischief in this case, even if the proofs of their clean and inoffensive state had not been so clearly established.

“After the disease had continued to prevail for some time, the inhabitants abandoned all the houses where sickness had appeared, dispersed themselves in the adjacent neighbourhood, and caused the forsaken houses to be thoroughly ventilated and cleansed. In consequence of this the disease was suddenly arrested. And it deserves to be mentioned, that, on this, as on all similar occasions, nothing like contagion was communicated from the sick who were distributed throughout the neighbourhood of the Wallabout, made their escape into New-York, or were sent to the Marine Hospital; although in all these different situations, they were surrounded by nurses and attendants in the usual manner.

“It is to be hoped, when all the circumstances of this affair are duly considered, it may have some effect hereafter in preventing the public credulity from being again so much abused, as it was in this case, by the fabrication of reports *grossly unfounded*, and which could answer no other purpose than to prop a declining doctrine, and to injure the reputation and commerce of New-York.”

“This is certainly taking very lofty ground, and adopting language towards gentlemen of the same profession, not altogether civil or proper. In my opinion they would have been justified in answering instantly in the same style; and, supported as they were, by having taken the right side of so plain a case, it was in their power to have replied in terms of tenfold severity. They, however, notwithstanding they feel indignant at such an attack, have chosen the moderate course; they have preferred to observe, themselves, a dignified silence towards their illiberal opponents, and to leave it to me to sum up the cause before the court. I shall do it to the best of my ability, nothing doubting but the public verdict will be on the side of truth and justice.

“I have pledged myself, to produce to this community such a body of testimony as to satisfy every rational man of the righteousness of the cause, which, from pure and

disinterested motives, as I trust, I have espoused. This testimony shall now be submitted without further introduction. In the next paper but one, I shall endeavour to sum up the case.

DEPOSITIONS.

(No. I.)

King's County, ss.

Simeon Helme, of lawful age, being duly sworn, deposeth and saith, that he has lived with his family at the Wallabout since March last, as master builder of the large ship now on the stocks at Jackson's-wharf; that he well remembers when the brig La Ruse came up from the quarantine ground, and hauled along side the wharf at the navy yard, where she discharged part of her ballast *before* the sickness broke out; that some days after discharging the first load of ballast, Mr. Philip Dring, son-in-law to the deponent, was taken with the yellow fever; he was taken ill on the 21st, and died on the 25th. And the deponent further saith, that the said Philip Dring lived in the same family with himself, and slept in an adjoining room with his wife and child, but at the time he was taken sick, his wife's two sisters also slept in the same room; that this was a small bed-room, but that the door of the room adjoining, which was a large room of eighteen by sixteen feet square, was always kept open. And the deponent further saith, that this large room had a window that opened into the navy-yard, at the wharf of which the brig La Ruse lay when his son-in-law was taken sick, and within *thirty* yards of this window by admeasurement. And the deponent further saith, that the evening before Philip Dring was taken he told this deponent that he never in his life smelt any thing so very bad as the smell from the vessels; meaning the brig La Ruse and the schooner Greyhound, which lay at a little distance from the wharf, but which had been pumping out their bilge-water, and that he heard Mrs. Little make a similar observation. And the deponent further saith, that Dring worked every day on the stern of a ship on the stocks, within about twenty-five yards of where the La Ruse lay at the navy-yard, and used to go repeatedly to a blacksmiths shop to get iron work, within eight or at most ten yards of the brig. And the deponent further saith, that as soon as Mr. Dring was taken sick he was removed into the large airy room adjoining the one where he used to sleep, where he remained till he died; but in a few days after he died, his wife was taken with the fever, and then the deponent and his family all moved off to an open and airy situation about a quarter of a mile to the south or south-east, but nevertheless on the 30th of the month, one of the deponent's daughters was taken down, and, on the first of July, the other, but all of whom recovered. And further saith not.

SIMEON HELME.

Sworn before me, September 7th, 1804.

WILLIAM FURMAN, J. P.

(No. II.)

King's County, ss.

Simeon Helme, jun. of lawful age, being duly sworn, saith, that he, the deponent, is by occupation a wharfinger and has resided as such at the Wallabout, Long-Island, since before the appearance of the yellow fever at that place in June last, but has slept at Brooklyn; that the deponent remembers when the brig *La Ruse* first came up from the quarantine ground, and hauled along side the wharf at the navy-yard, which was, according to the best of his recollection, about the 12th of June; that a few days *afterwards*, and before the sickness appeared, this brig began to unload her ballast at the navy-yard; that he heard some of the persons employed in unloading this ballast say, that it was so very offensive, they could not throw out but a few stones at a time, without being obliged to put their heads up the hatchway to obtain a breath of fresh air: and the deponent saith, that after unloading one sloop load, for some cause she desisted, and on the 23d she moved about her length westward to Jackson's wharf, which is only separated from the navy-yard by a fence; and that after laying three days at this wharf, during which time she unloaded most of her ballast, Dr Bailey came up from the quarantine ground and ordered her down; but before she went off the deponent saw one or more barrels of tainted beef thrown overboard by Dr. Bailey's orders. And the deponent further saith, that he frequently saw Mrs. Little, the woman who was first taken ill and died, down upon the wharf near where the brig *La Ruse* lay, and near the brig, looking for her child, which used to play about the wharf.

The deponent further saith, that when the *La Ruse* lay at the navy-yard, the schooner *Greyhound* lay at about one hundred or one hundred and fifty yards distant from the wharf, and while there, on the morning of the 18th or 19th of June, as the deponent was at work in the ship-yard, he perceived a most shocking smell to come from the water, the wind then being about north, and looking up he observed the schooner was pumping out her bilge water, which was the cause of the smell. At this time Philip Dring and Isaac Brown both complained to the deponent very much of this offensive smell, and the latter was obliged to leave his work in consequence, and go and get a drink of brandy and water; in a day or two afterwards they were both taken with the fever. And the deponent further saith, that he views the Wallabout to be a healthy situation, well accommodated as to a free circulation of air, and the ship-yard as clean as ship-yards usually are any where, nor is there any animal or vegetable filth lying about or near it, so as to cause any kind of inconvenience to any person in the place. And further saith not.

SIMEON HELME, Jun.

Sworn before me, September 7th, 1804.

WILLIAM FURMAN, J. P.

(No. III.)

King's County, ss.

Isaac M. Brown being duly sworn, deposes and saith, that being at work on the stern of a new ship on the stocks, which was then only in frame, with but three streaks of plank on her bottom, the deponent

on either Saturday the 16th, or Monday the 18th of June, was addressed by Philip Dring, who was at work on the stern of an adjoining ship, and asked what was that nauseous and disagreeable smell, to which the deponent said it was the bilge-water then pumping out of the schooner Greyhound, which lay, as near as the deponent can judge, about one hundred and fifty yards to the windward, or that it came from the brig La Ruse, which was also then pumping out her bilge-water, and which lay within about thirty yards of where the deponent was at work. The effect was so disagreeable that the deponent got off the stage and went and got a glass of brandy and water. On the Wednesday following, to wit, on the 20th, the deponent found himself attacked with a pain in the head, back and limbs, on which he told Mr. Middletons that he hoped for the best, but he felt just as he formerly did when he had the yellow fever; soon after he was attacked with it, and was sick about three weeks, when he recovered. And the deponent further saith, that he boarded in the house of Mr. Middletons, adjoining, north-east, the house of Mr. Helme, and under the same roof; that he slept in a room alone, excepting for one or two nights, when another person slept in the room, but in a different bed; that he never experienced any inconvenience from too many persons being crowded into one bed-room, nor did he ever hear of any such instance at the yard; nor has the deponent ever heard of any complaint by any person at the yard, of a want of circulation of air, nor has he ever perceived that the yard was less clean or the ground about it, than other ship-yards in New-York. And the deponent further saith, that he heard Mrs. Little complain of the bad smell of the bilge-water, and that she asked him what it was that smelt so bad at the time he went up and got the brandy and water? And further saith not.

ISAAC M. BROWN.

Sworn before me, September 7th, 1804.

WILLIAM FURMAN, J. P.

(No. IV.)

King's County, ss.

Samuel Middletons being duly sworn, testifies and says, that he has, for some time past, worked as ship-carpenter at Jackson's ship-yard, and lives there with his family; that he boards some of the workmen, and occupies a house east of where the two ships are now building, within about ten yards of one of them; that his house is under the same roof with that occupied by Simeon Helme, but north of it; that he has two windows, one below and one above, opening eastward on the line of the navy-yard, but the lower window has been cut since the fever; and that he occupied this house before and during the time of the late yellow fever at the Wallabout. The deponent further saith, that he well remembers that on the 18th of June, he was in the ship-yard in the morning, when the Greyhound was pumping out her bilge-water, which smelt excessively nauseous; he heard both Dring and Brown complain of it; the former of whom was taken with the yellow fever on the 21st, and the latter, who boarded

in the deponent's house, was taken on the 20th ; and he also heard Mrs. Little complain of the same thing, who was also taken on the 20th, and died on the 24th or 25th.

SAMUEL MIDDLETONS.

Sworn before me, September 7th, 1804.

WILLIAM FURMAN, J. P.

(No. V.)

King's County, ss.

Edward Livingston, of lawful age, being duly sworn, testifies and saith, that in June last, he was engaged as sawyer at Jackson's ship-yard ; that on the 18th or 19th of June, as he was at work one morning in the saw-pit, he was struck with a most dreadful smell, which he perceived to come from the bilge-water then pumping out of the Greyhound, lying about one hundred or one hundred and fifty yards from the wharf. And the deponent further saith, that on Tuesday evening the 19th of said June, as nearly as he can recollect, he went on board the brig La Ruse, then lying at the wharf, to get her boat to bring up a log that lay in the stream, and on the 20th he was taken down, in the evening, with the yellow fever ; in consequence of which he was sent to the Marine Hospital, after being sick a week, and where, after about five weeks, he recovered. And the deponent further saith, that he never experienced any inconvenience from dirt or filth lying about the yard or the houses, nor saw more than is usual at ship-yards ; nor had he ever suffered for want of circulation of air or excessive heat, while working there. And the deponent saith, that at the time he was taken sick he boarded at Mr. Little's, at the head of the ship-yard, at which time no other workman boarded in the house with the deponent but William Arbutton, who slept in the same bed with him, and was afterwards taken sick with the fever, as he is informed, and died at the Hospital ; that no other persons, at that time, lived at Mr. Little's house besides Mr. Little and his wife, Jane Johnson, who was taken sick two days after the deponent, and died, as the deponent is informed, on the 27th, and two small children ; but no person slept in the room with the deponent, excepting the said Arbutton ; further the deponent saith not.

EDWARD LIVINGSTON.

Sworn before me, September 7th, 1804

WILLIAM FURMAN, J. P.

(No. VI.)

King's County, ss.

Benjamin Rhodes, of lawful age, being duly sworn, deposeth and saith, that he now lives and has lived for seven years past at the place called the Wallabout, on Long-Island, and that during the said time he has been employed at the said place as a master builder, and that till the appearance of the yellow fever in June last, he has ever found the place very healthy ; that it is so situated as always to have a cool and pleasant air whenever there is wind stirring, from whatever quarter it blows ; this is more particularly owing to its being surrounded on all sides but one by water, and on that side, which is the south side, there is a break in the hill, so that even when the wind is south

there is always a draught draws down through the ship-yards. And the deponent saith, that for seven years past the number of workmen employed at the navy-yard adjoining Jackson's yard where the ships are now building, has been greater than the present year, and in some years five to one. And the deponent further saith, that there is not, nor was at the time of the appearance of the fever, or at any other time this summer, any animal or vegetable filth overspreading the ground at the ship-yard or round the boarding houses near it, but that it is, and has been as clean as ship-yards usually are in New-York. And the deponent further saith, that he has never heard any inhabitants at the Wallabout, nor any of the workmen employed there, complain of the want of a free circulation of air, or say that they thought the place an unfavourable situation, but on the contrary he has frequently heard the workmen speak of it as being far preferable on that account, to the other side of the river in New-York. And the deponent further saith, that he lives about an eighth of a mile west of Mr. Helme and Mr. Middletons, where the first cases happened, but that he visited the sick every day till the 29th of June, when he was attacked with the fever himself, but after several days illness recovered. And the deponent further saith, that he keeps a boarding house for workmen, but has never been obliged to put more persons into one bed-room than could be well accommodated, and on examination the deponent is fully convinced that in no instance any of the boarders have been before the sickness or since, crowded at the houses at Jackson's-yard.

BENJAMIN RHODES.

Sworn before me, September 7th, 1804.

WILLIAM FURMAN, J. P.

(No. VII.)

King's County, ss.

Asa Randel, of lawful age, being duly sworn, saith, that he has been employed as master ship-joiner at Jackson's yard, at the Wallabout, since the first of May last, and that he has formerly been employed at the adjoining navy-yard: that during the time he has been so employed the present season, the ground of the ship-yard, and the grounds about the houses, have been, and are, as clean as is customary, as clean as other ship-yards are, and as the former ship-yard used to be; that all the time the deponent has been so occupied before and during the late fever, and since, he has never observed any thing of so filthy a nature as to cause the least inconvenience to the persons residing there; nor has he ever heard any complaint of the want of a free circulation of air, but, on the contrary, when there has been any air stirring any where, the Wallabout has its full proportion. The deponent further saith, that he never has heard any complaint by any of the workmen of being crowded in the boarding houses by night or day, nor does he believe, from inquiry, any cause of such complaint ever existed.

And the deponent further saith, that he heard captain Chammings say, that when he opened the hatches, and went down the hold of the brig *La Ruse*, there was a very disagreeable smell, but that he conceived it to be no more than what had been caused by the confined

air of the hold, and therefore did not mind it. And the deponent further saith, that he heard Benjamin Brown, the boatman employed in taking out the ballast of the brig La Ruse, say, that the ballast, when he first began to take it out, smelt very bad, but he thought it was owing to the closeness of the hatches, and was not at all afraid. And the deponent saith, that by observation, and the best inquiries he can make, not more than seven or eight hands were ever employed on board the La Ruse to caulk her deck; and the deponent further saith, that he was informed by captain Chammings, that this brig was an old captured vessel, and was bought in the West-Indies by said Chammings, and sent to New-York under the command of captain Story.

ASA RANDEL.

Sworn before me, September 7th, 1804.

WILLIAM FURMAN, J. P.

(VIII.)

King's County, ss.

Jonathan S. Wakeman, being duly sworn, saith, that he resided at the Wallabout for some years past, during which time he has done the work for the ship-yard, as the master blacksmith, and in that time a greater number of workmen have generally been employed than in the present year; in 1799, the deponent boarded nineteen hands in his house, and the present year he has boarded, before the fever, two, and since that time, five; the deponent further saith, that he was at work with Philip Dring, on the stern of the new ship, when the smell of the bilge water was so nauseous and offensive to them all, and when Dring spoke to the deponent and asked him what was the cause of such a dreadful smell? The deponent looked toward the schooner Greyhound, and saw her pumping out her bilge-water, and he saw the water come out so very black as to turn the water black at her side. And the deponent further saith, that the ship-yard, with which he has been acquainted for seven years, has always been in a clean and healthy state, and as clean the present year, since it was removed to Jackson's wharf, both before and at the time of the fever, as it ever was, when it was kept at the navy-yard, on the other side of the fence. The deponent further saith, that whenever any wind is stirring, from whatever quarter it blows, the yard is as well supplied with fresh and cool breezes as any place whatever; and that when the wind blows from the south-east any way hard he is obliged to shut his shop-window; nor has he ever heard of any complaint of a want of circulation of air by any of the people. And the deponent further saith, that his sister, Sally Wakeman, who died with the yellow fever, boarded at his house, and before she was taken ill she frequently visited Messrs. Dring's, Helme's and Little's, and was greater part of her time with the sick.

JONATHAN S. WAKEMAN.

Sworn before me, September 7th, 1804

WILLIAM FURMAN, J. P.

(No. IX.)

King's County, ss.

Thomas Wright, of lawful age, being duly sworn, saith, that he has for some time worked at Jackson's ship-yard, at the Wallabout, as a ship-joiner, and was there on the 26th of June last, at which time he saw Dr. Bailey at the yard, and he heard him order two barrels, one full, the other part full, of spoilt beef, to be thrown overboard from on board the brig La Ruse, which then lay at the wharf. And the deponent further saith, that he never observed that the ship-yard, or any of the ground about it, was ever in a more dirty or filthy state than is customary at other ship-yards, and such as is caused by the quantity of dry chips that lie loose about the vessels; nor did he ever hear any person complain, or perceive himself, that the ship-yard at the Wallabout was so situated as not to have a free circulation of air

THOMAS WRIGHT.

Sworn before me, September 7th, 1804.

WILLIAM FURMAN, J. P.

(No. X.)

King's County, ss.

William Sherlock deposeth and saith, that he has lived three years at the Wallabout; said place was as healthy as any place, during the time, as he ever knew, until the shipping came there in June last. On the 20th June the yellow fever made its appearance; on the 22d his wife was violently attacked, and on the 28th died with the black vomit. She frequently went to the dock of the navy-yard, where the brig La Ruse lay, to pick up chips; the rooms where his wife and three children and self resided, were large, on the second story, had the benefit of a free and pure air from all quarters, being nearly surrounded with running salt water. A few days after the families moved away from Jackson's yard, the fever disappeared; the place has been healthy since, although there has been nearly twice the number of men at work at Jackson's yard as there were before the sickness, all whom have been healthy; and further saith not.

WILLIAM SHERLOCK.

Sworn before me, September 7th, 1805.

WILLIAM FURMAN, J. P.

"Before I go farther I owe it to truth and candour to correct an error, which I have just discovered in the preceding number.

"It has been said that the crew of La Ruse abandoned her at the quarantine ground, and that she was brought to the Wallabout, by persons hired from Long-Island. This is a mistake, she was brought up by her own crew.

"Previous to proceeding with the depositions it may not be amiss to state, that captain Story, who commanded La

Ruse, has very politely given me all the information I asked for, and even permitted me to examine his log-book and to transcribe what I chose. The history of the brig in relation to this affair is as follows :

“ The brig La Ruse was taken as a merchant vessel, returning from Demerara to Guernsey, by a French privateer, and carried into Point-Petre,* where she was purchased by Captain Chammings about ten days after her arrival, and in about three weeks more was fitted out for this port ; the whole time she lay at Point-Petre was, as I am informed, about six weeks. Before captain Story sailed he understood some cases of *fever* had occurred at the place, but not that the disease was *prevalent* so that it could be called a *sickly port*, and thus be brought within our Act. On the 15th of May she set sail. The following is an extract from the log-book :

‘ 23d. Cook complained. 24th. Jack (a boy about nineteen years of age) and cook complaining. 25th. Cook worse. 26th. half past one, Larch Norgrave [the cook] departed this life, after a short illness, and was committed to the deep. Jack much better.’

“ *The cook’s bedding and all his clothes were thrown overboard with him.* The brig arrived at the quarantine June 5th, and on the 8th the captain left her, and she was brought up to the Wallabout by the crew.”

“ The above account has been read by me, and the circumstances are correctly stated.

WM. W. STORY.”

September 13, 1804.

* We understand that our board of health perceiving that persons in many vessels from Point-Petre were affected with yellow fever, have, during the last two months, subjected all shipping from thence to a rigid quarantine, and we now deem it our duty, for the sake of the health of the other ports of the United States, to declare from *authority* that the Board yesterday received official information of the prevalence of the yellow fever both on shore and in the port of Point-Petre.—*Aurora*.

" I now proceed with the remainder of the testimony.

(No. XI.)

King's County, ss.

James Cassils, of lawful age, being duly sworn, deposeth and saith, that he was one of the labourers who worked at the Wallabout as ship-carpenter, and was in the yard on the 18th of June, when he perceived a very disagreeable smell to come from the vessels, and looking towards the schooner Greyhound, saw she was pumping out her bilge-water, which seemed to be the cause of it.

And the deponent further saith, that on the 20th of June he was taken with the yellow fever; and on the 27th of June, the deponent was sent to the Marine Hospital, where, after some days illness, he recovered; and further saith not.

JAMES CASSILS.

Sworn before me, September 14, 1804.

WILLIAM FURMAN, J. P.

(No. XII.)

King's County, ss.

Samuel White, of lawful age, being duly sworn, deposeth and saith, that he was one of the ship-carpenters who worked at the Wallabout, and was in the yard on the 18th of June, when he perceived a very disagreeable smell to come from the vessels, and looking towards the schooner Greyhound, saw she was pumping out her bilge-water, which seemed to be the cause of it; and the deponent further saith, that on the 20th of June he was taken with the yellow fever, and recovered in about twelve days; and further saith not.

SAMUEL WHITE.

Sworn before me, September 7, 1804.

WILLIAM FURMAN, J. P.

LETTERS.

(No. XIII.)

New-York, September 12, 1804.

TO MR. SIMEON HELME.—SIR,

I perceive that Dr. Walter, in his letter to the health officer, was, among other things, undertaken to state the dimensions of your house, and the number of persons in your family. Suspecting from what I have seen and been informed of, that the Doctor is wide of the truth, I enclose you that part of his letter containing the above, and should I be right in my conjecture as to its inaccuracy, I will thank you to inform me of it, and to send me the exact dimensions of your rooms, and number of persons living with you at the time the fever appeared. I will not trouble you to put it in the form of an affidavit; a letter will answer.

Yours,

WILLIAM COLEMAN

(No. XIV.)

Wallabout, September 12, 1804.

TO MR. COLEMAN.—SIR,

The following is the information I suppose you want: The house I now occupy is two stories high, containing two large rooms sixteen by eighteen feet, one in each story, and two small rooms, ten by twelve; besides this, there is a kitchen in a separate building, fourteen by fourteen. At the time of the fever, there slept in the lower part of the house, myself and wife, Mr. Dring and wife and his four children, and my two daughters. In the upper rooms slept Mr. Leeds and wife and two children, in one room, and two men, boarders, in the other room; and four boarders, workmen, slept in the kitchen, making in the whole, twenty persons which then composed the family.

Yours,

SIMEON HELME.

(No. XV.)

September 12, 1804.

TO MR. COLEMAN.—SIR,

As the most satisfactory answer to your letter I can give, respecting the Wallabout, I here transcribe, by permission of his honour the Mayor, that passage in my report, as secretary of the Health Committee, which relates to your questions.

“ My first object was to examine the state of the houses, with respect to the cleanliness, and I had the satisfaction of perceiving that the inhabitants had not been negligent in regard to this important article. The rooms which had been occupied by the sick, had been thoroughly cleansed, and the houses whitewashed; nor did I see any thing offensive in the vicinity.”

To the above I may add, that from the view I had of the situation of the place, the information I received from different individuals on the spot, and an unbiased reflection upon the whole in my own mind, the result is, that I perceive no cause existing there, which, in my opinion, could have produced malignant fever. Though formerly an advocate for the domestic origin of that disorder, but always believing, that it might likewise be imported, I am induced to suppose that the late disorder at the Wallabout must have been brought there by some one or more of the vessels, which then lay at the Wallabout.

I am Sir, your most obedient servant,

JAMES HARDIE.

(No. XVI.)

Brooklyn, September 12, 1804.

MR. COLEMAN.—SIR,

Your letter is just received, nor is the least apology necessary for having addressed it to me. My answer shall be marked by sincerity, and with all the perspicuity in my power.

In reply to your first question I have to say, that the ground at the Wallabout is a fine gravel; with wells of good water. There are now at this place eight dwelling houses and two or three outhouses; the distance between the two extreme houses are about one third of a

mile. These houses are sufficiently separated for every purpose of cleanliness or convenience. Middletons and Helme both live under one roof; these two houses only are situated with their rears on the navy-yard to the eastward, but they both have upper and lower windows on that side, and are well ventilated. On the south is a bank of about fifty feet in height, but in this bank there is such a valley that whenever a south wind blows the place below enjoys its share of it. Being surrounded on every other side by running salt water, for there are no fresh marshes near, it almost constantly enjoys cool and refreshing breezes equal to any other place. I lately, on a very hot day, and when the wind was south, made the experiment of placing the thermometer in the open air in the middle of the day in the shade below, and afterwards placed it in the open air under a tree in the orchard above, when I found the mercury to rise in a short time nearly two degrees. In a word, I regard it, and have always regarded it, as being as healthy a place as I ever knew; and the present yard is, in my opinion, better ventilated and more accommodated with fresh air and cool breezes than the former ship-yard, now the navy yard was; which is owing to our having dug away the bank since. I cannot express my surprise to you, sir, at lately observing it asserted in an account taken from the Medical Repository, that the place was unfavourable to a free circulation of air, and that the inhabitants suffered from the hot and stagnant air they were compelled to breathe. I find it also stated in the same account, that the two ships now on the stocks prevented the approach of the air from the west and north-west; but, at the time of the fever those ships had very few planks on, so that the air could meet with little or no obstruction; though since, they have been planked, but the fever has not made a second appearance.

For several years I have carried on ship-building, and employed more men at the navy-yard, which joins it; and last year I employed a greater number of men at this same ship-yard, than I did prior to the sickness this year, but so far from being unhealthy, I have been accustomed to postpone engaging my hands till the latter part of summer, when I had no difficulty in procuring workmen a shilling a day cheaper than they would do the same work in New-York; nor have I been able to discover, or have heard of any thing that should make it more unhealthy this year than in former seasons, and since the sickness I have had twice the number of hands at work I had before. I have been at the yard almost every day, but I have never discovered that the ground of the ship-yard was dirty, more than what was caused by dry chips lying about, nor have I seen any more filth of any sort than is usual round houses in such country places. You ask me if there are privies, because, as I presume, the Medical Repository account asserts, "the workmen did not possess the convenience of a privy, the want of which, they say, must have added exceedingly to the other sources of the accumulation of filth." There is a large privy at Helme's house, close by the ship-yard, but the truth is, the workmen do not use it, because the wharf extends so low as always to have more or less water, and during both rising and falling water, has a strong current running by it, and the men go

down there. You can judge, sir, whether this "can add exceedingly to the other sources of filth." But it is also said that the boarding houses allotted to the workmen were excessively crowded. The number of houses at the Wallabout, situated within about one third of a mile of ground, is eight; of these seven are two-story houses, and five are double houses, all of them sufficiently roomy for the families that occupy them. The whole number of workmen at the yard, at the time the fever appeared there, was about twenty; of these, one lodged at Mr. Middletons'; seven at Mr. Helme's, three in the house with himself, and four in an out-house; two at Mr. Little's; from four to five at Mr. Rhodes'; at Mr. Titus's two; at Mr. Goodridge's one, and at Mr. Martin's one. As to the number of workmen stowed in single rooms, I have not been able to discover that it was in any instance inconvenient; the greatest number that have slept in a room has been four, all of whom have remained in health.

Your second question relates to the characters of the workmen, and the tenants who occupy the houses. As to this I can only say, that so far as my acquaintance extends, I have uniformly found the workmen to be decent and industrious, and persons of veracity. If your object is to know whether the persons who have made affidavits respecting the fever at the Wallabout, are people to be credited, I have no difficulty in saying, that they are all decent men, and entitled to full credit; and, having read their affidavits, I have no doubt of the facts to which they have testified, as most of them fell under my own observation. As to the tenants, they are as cleanly, well behaved, industrious people as I wish to have in my houses.

In answer to your third question, I well remember the brig and schooner both coming to the Wallabout. The schooner lay off, as I should judge, about one hundred, or one hundred and fifty yards, but the brig lay alongside the wharf, at first at the navy-yard, for some days, and then she hauled her length forward to the ship-yard; where she lay till she was moved down to the quarantine ground.

On the 26th of June, after the brig had been ordered back to the quarantine ground by Dr. Bailey, and after the death of Mrs. Little and Mr. Dring, Dr. Rodgers, the health officer, came up to the ship-yard, and seeing him standing there, I asked him what he thought of the disorder that prevailed at the place, and whether he did not think it was the malignant fever; and told him I wanted information on which I could rely for my guide as to my workmen, who looked up to me for advice whether to stay at the yard or not. He said he had not discovered any thing to induce him to be of that opinion; at this time Dr. Waters came out of Mr. Little's and said one or two more were going; I then asked Dr. Rodgers to go in and see the persons sick there, Jane Johnson and Edward Livingston, and he did so. I then requested him to go over to the mills at the navy-yard and see Mrs. Sherlock, he did so; when he came out of the house, I asked him what he thought? he said Mrs. Sherlock had the intermittent fever, and I need not be alarmed. The next day Jane Johnson died, and the day after, word came to me that Mrs. Sherlock was dying; both she and Jane Johnson died with the black vomit. I then was

fully convinced that it was the yellow fever, and advised the people to remove from the place as fast as possible. Most of them did so, and soon after the disease disappeared.

This, sir, is all the information that I presume you want, and all that occurs to me as being material to the question to which it relates.

I am, &c.

JOHN JACKSON.

(No. XVII)

New-York, September 12, 1804.

TO DR. DANIEL LORD.—SIR,

Being engaged in the investigation of facts, in order to enable the public to form a correct opinion of the origin of the yellow fever, which appeared at the Wallabout, in June last, I conceive that the very interesting nature of this inquiry to the community, is such, as to form my apology for applying to any person who, I may suppose, can give me information on the subject. I therefore, sir, do not hesitate to address myself to you, although I have not the pleasure of a personal acquaintance with you, as I understand you were the first physician called on to visit the sick on that occasion, and can probably furnish me with some important particulars. In order that you may perceive at once the design of my inquiries, and shape your answer to the precise point, I take the liberty to submit the following questions to you :

First—When you saw your patient or patients, did you, at once, judge the disease to be the yellow fever ?

Second—Did you discover any thing in the ship-yard, or in the houses, or about them, to induce you to believe the disease originated there ?

Third—Did you see one or more vessels lying, at that time, at the Wallabout, to which you thought, and still think, the origin of the disease justly attributable ?

Your answer, sir, in as concise a form as you please, will render a service to the cause of truth, and particularly oblige

Your humble servant,

WILLIAM COLEMAN.

(No. XVIII)

New-York, September 12, 1804.

MR. COLEMAN.—SIR,

In answer to your letter, just received, I with sincerity declare, that I would very gladly have been excused from seeming to take any side in the controversy. A great aversion to having my name appear in the papers, and still more, a personal friendship for the Health Physician, create a strong reluctance against complying with your request ; on the other hand, a sense of duty to the community, and of what is owing to truth, operate forcibly to induce me not to withhold from the public such information relative to the late epidemic at the Wallabout, as is in my possession. I proceed, therefore, briefly to answer your question.

To the first I have to say, that on the 24th day of June I was called to visit Philip Dring, who, I was told, was very sick, with vomiting, &c.

As soon as I saw him I had no hesitation in deciding, in my own mind, that it was a case of unequivocal *yellow fever*, having seen a great deal of that disease since 1797, when I first removed to this city. At the same time, in an adjoining room, lay another person by the name of Cassils, not so ill, but who was then attacked with the disease. In answer to repeated inquiries of what I thought of their illness, I told Mr. and Mrs. Helme, Dring's father and mother-in-law, that it was the yellow fever. I then saw Jane Johnson and a man by the name of Livingston, at Mr. Little's, a house within a few yards of Helme's, whose cases I likewise pronounced to be yellow fever.

In answer to your second question I have to say, that being one of those who firmly and steadily believed the yellow fever was a disease of local origin, I inquired of Mr. Helme first, if there were no fresh stagnant water or dead animals in his neighbourhood? but was answered in the negative, and told the water which covered the surface every where near them, was salt water, and rose and fell with the tide. I next inquired of him where their sink and necessary were? after being told, and viewing them, I walked over the ship-yard and down to the wharf, and about it, and could perceive nothing that could give the least cause of suspicion, nor did the situation of the houses, or of the adjoining grounds, furnish to my mind any cause for the appearance of the disease.

In answer to your third question, I did see two schooners and a brig: one schooner and the brig lying at the wharf. I went on board the schooner at the wharf, which was the *Union*; on examination she appeared to have been well cleansed and white-washed, both in the hold and fore-castle, and I thought her perfectly clean. I did not go on board the brig, for I was informed her cabin and hold, &c. were all locked up, so that I could not examine her. Young Mr. Helme at this time observed, that it must have been the ballast of this brig that caused the mischief, and on inquiry, I found she had unloaded some part of it. If I am asked my opinion on this question, I feel myself, as a man loving truth and candour, obliged to declare, that there was such a total want of local causes, (the wind then being from the north-east and east, and for about a fortnight previous, and the weather quite cool,) that I felt myself entirely overpowered and compelled to relinquish an opinion that had been unshaken for years. It was my decided opinion then, it remained so after two more visits, (and the last for the express purpose of examining into facts,) and I now am necessitated to be of opinion, that the yellow fever was introduced into that place by one or both of the vessels that I saw there.

I am, Sir, your humble servant,

DANIEL LORD."

" I now proceed to sum up the cause, which I shall endeavour to do with brevity, candour and precision. Fortunately, the grounds of the controversy are narrowed by its being, at length, admitted, (with what inexpressible

reluctance the public has seen,) that the disease in question was decided *yellow fever*.

“ The health-officer, after two deaths had occurred, and while three lay sick before him, pronounced the disease not malignant [or yellow] fever; and after the examination of a third, he deliberately and formally declared it was only an intermittent, and that there was no cause of alarm. While the resident physician, equally acute and discerning, gave it officially as his opinion to the *Common Council*, in the case of Arbutton, even three days after his attack, and but forty-eight hours before his death of black vomit, that there were no symptoms sufficiently marked to warrant an opinion; and, at the same time informed them that Patrick Profay, another labourer, who had been suffered to come into the heart of the city, and pass through all the stages of the disease without a word's being communicated to the public, or even to the Common Council, “ was better.” Thus our city was exposed for several days to all the horrors of an epidemic yellow fever, because those to whom the care of it had been particularly committed held a theoretical opinion that the yellow fever was not a contagious disease. Who will say we have not had a narrow escape? But cases multiplied so fast, and deaths so frequently followed, marked by such peculiar and dreadful symptoms, that at length they admitted that the yellow fever did prevail at the Wallabout. The only question then remaining is, in what way was this pestilence introduced there? Two only are suggested: one that it originated in the place from bad “ air, soil, weather,” and other local causes; the other, that it was imported in the brig *La Ruse*, from Point-Petre, or the schooner *Greyhound*, from Cape-Francois, and communicated to the inhabitants.

“ The Health Commissioners are the advocates of the former opinion ; other physicians, of equal standing in the profession, (to say the least) embrace the latter. Thus were they at issue.

“ The first particular information that the public had of the epidemic, was communicated by three physicians of this city, Drs. Hamersley, Stringham, and Gamage, in a letter addressed to his honour the Mayor, and published on the 3d of July, thirteen days after the disease had made its appearance. After stating a number of facts, they observed, that they should forbear making any comments, and that their only wish was to present to the first magistrate, such a statement of facts, as should enable him to take the most proper method for the preservation of the city. What could be more modest, more inoffensive, than this highly praiseworthy conduct? Who could have supposed it could have created animosity in any one? But the facts they stated, though unaccompanied with remark, spoke a louder language than any comments ; they went directly to the destruction of a dangerous and darling theory, to which certain medical gentlemen are wedded, and which they seem determined to part with but with life, and to them it gave the highest offence. This offence vented itself in aspersions the most extraordinary the public had ever witnessed in an address by gentlemen of a learned profession to brothers of the same profession. The Medical Repository went the whole length of charging them with *fabricating reports grossly unfounded, for the purpose of abusing the public credulity*, “ which would answer no other purpose than to prop a declining doctrine, and to injure the reputation and commerce of New-York.” But we were not to be the dupes of this imposing language. We shall soon see who it was that *fabricated reports* ; we shall soon see who it was

that *abused public credulity* for the purpose of *propping a declining doctrine*; and lastly, we shall see whose doctrine it is, that is indeed *injurious to the reputation and commerce of New-York*, and a libel on our climate and our country.

“ The answers have appeared; the first from Dr. John R. B. Rodgers, supported by an accompanying letter of Dr. Walter; the second from Drs. Mitchill and Miller, editors of the Medical Repository, and the latter the resident physician. These are now to be examined.

“ Method would seem to require me to begin with a recapitulation of the facts stated by the three physicians, but it will be seen that that is not necessary to a full understanding of the subject. As the editors of the Medical Repository have given us, at large, and with much learning and ingenuity, a particular account of the “local circumstances of the ship-yard, together with the condition of the inhabitants,” for the express purpose of *satisfying all reasonable inquirers that the mischief generated there*, I will begin with them. That they may not complain of any “malignant misrepresentations” from me, I shall, whenever practicable, quote their own words; and I shall give the refutation in the words of the witnesses.

“ To show the unfavourable situation of the Wallabout, they say:

“ *A very high and steep bank, beginning a few feet from the house inhabited by the sick, effectually deprives persons residing there of the benefit of all refreshing breezes from the south and south-west.*”—Medical Repository.

Take the following in answer—

“ It [the Wallabout] is so situated as always to have a cool and pleasant air whenever there is wind stirring, from *whatever* quarter it blows; this is more particularly owing to its being surrounded on all sides but one by water, and on that side, which is the south side, there is a break in the hill, so that even when the wind is south, there is always a draught draws down through the ship-yard.”—*Rhodes' Deposition.*

Same point—"On the south, is a bank of about fifty feet in height, but in this bank there is a valley, that whenever a south wind blows the place below enjoys its share of it."—*Jackson's Letter*.

Once more—"The principal houses are so situated with their rears to the eastward on the line of the navy-yard, that for want of doors and windows on that side, they almost entirely exclude the north-east, east and south-east winds."—*Medical Repository*.

E. contra.—"Samuel Middletons, being duly sworn, testifies and says, that his house is under the same roof with that occupied by Simeon Helme, but north of it; that he has two windows, one below and one above, opening eastward on the line of the navy-yard, but the lower window was cut since the fever."

Same point.—"And the deponent further saith, that this large room had a window that opened into the navy-yard."—*Helme's Deposition*.

Same point.—"Middletons and Helme both live under one roof; these two houses only are situated with their rears on the navy-yard to the eastward, but they both have upper and lower windows on that side, and are all ventilated."—*Jackson's Letter*.

Once more—"Two ships on the stocks, surrounded by their scaffolding, together with large quantities of timber deposited in different situations, prevented, in a great degree, the approach of currents of air from the west and north-west."—*Medical Repository*.

E. contra.—"Isaac M. Brown, being duly sworn, deposeth and saith, that being at work on the stern of a new ship on the stocks, which was then only in frame, with not three streaks of plank on her bottom."

Same point.—"I find it also stated in the same account, that the two ships on the stocks prevented the approach of the air from the west and north-west, but at the time of the fever, those ships had very few planks on, so that the air could meet with little or no obstruction; though since, they have been planked, but the fever has not made a second appearance."—*Jackson's Letter*.

Once more—"From these circumstances, it results, that the only wind which had free access to the ship-yard, or could ventilate it with any effect was a north wind, which seldom blows during the hot season. The effect of these circumstances was strongly felt and acknowledged by the inhabitants of the place, who described, in striking terms, the unfavourableness of it to a free circulation of air, and their sufferings in consequence of the very hot and stagnant air they were obliged to breathe."—*Medical Repository*.

E. contra.—"And the deponent further saith, that he views the Wallabout to be a healthy situation, well accommodated as to a free circulation of air."—*Helme's, jun. Deposition*.

Same point.—"Nor has the deponent ever heard of any complaint by any person at the yard, of the want of a free circulation of air."—*Brown's Deposition*.

Same point.—"Nor had he ever suffered for want of circulation of air, or excessive heat while working there."—*Livingston's Deposition*.

Same point.—" And the deponent further saith, that he has never heard any inhabitants at the Wallabout, nor any of the workmen employed there, complain of the want of a free circulation of air, or say that they thought the place an unfavourable situation, but on the contrary he has frequently heard the workmen speak of it as being far preferable on that account, to the other side of the river in New-York".—*Rhode's Deposition.*

Same point.—" Nor has he ever heard any complaint of the want of a free circulation of air, but on the contrary, when there has been any air stirring any where, the Wallabout has its full proportion."

Randel's Deposition.

Same point.—" The deponent further saith, that whenever any wind is stirring, from whatever quarter it blows, the yard is as well supplied with fresh and cool breezes as any place whatever; and when the wind blows from the south east any way hard he is obliged to shut his shop window; nor has he ever heard any complaint of a want of circulation of air by any of the people."—*Wakeman's Deposition.*

Same point.—" Nor did he ever hear any person complain, or perceive himself, that the ship-yard at the Wallabout was so situated as not to have a free circulation of air."—*Wright's Deposition.*

Same point.—" Being surrounded on every other side by running salt water, for there are no fresh marshes near, it almost constantly enjoys cool and refreshing breezes equal to any other place. I lately, on a very hot day, and when the wind was south, made the experiment of placing a thermometer in the open air in the middle of the day, *in the shade below*, and afterwards placed it in the open air under a tree *in the orchard above*, when I found the mercury to rise in a short time nearly two degrees. In a word I regard it, and have always regarded it as being as healthy a place as I ever knew; and the present yard is, in my opinion, better ventilated and more accommodated with fresh air and cool breezes than the former ship-yard, now the navy-yard, ever was; which is owing to our having dug away the bank since. I cannot express my surprise to you, sir, at lately observing it asserted in an account taken from the Medical Repository, that the place was unfavourable to a free circulation of air, and that the inhabitants suffered from the hot and stagnant air they were compelled to breathe."—*Jackson's Letter.*

"I have been the more particular in multiplying testimony as to this single fact, because it is one that seems to depend on the experience and feelings of numbers. We now return to our two physicians.

"The boarding houses allotted to the numerous workmen at this ship-yard were excessively crowded. The number of lodgers stowed in single rooms was, in several instances, so large that great danger must have resulted from this source, in a situation ever so favourable on other accounts. In one instance, it is asserted that nine labouring men, with their bedding, &c. were obliged to pass their nights in a room about ten or twelve

feet square, with only one window and door. In several other cases which have been distinctly related, the degree of crowding was nearly as great."—Medical Repository.

F. contra.—"On examination the deponent is fully convinced, that in no instance, any of the boarders have been, before the sickness or since, crowded at the houses at Jackson's yard."—*Rhodes' Deposition.*

Same point.—"The deponent further saith, that he never has heard any complaint by any of the workmen of being crowded in the boarding houses by night or day, nor does he believe, from inquiry, any cause of such complaint ever existed."—*Randel's Deposition.*

Same point.—"For several years I have carried on ship-building, and employed more men at the navy-yard than now at the ship-yard which joins it; and last year I employed a greater number of men at this same ship-yard, than I did prior to the sickness this year, but so far from being unhealthy, I have been accustomed to postpone engaging my hands till the latter part of the summer, when I had no difficulty in procuring workmen a shilling a day cheaper than they would do the same work in New-York; nor have I been able to discover, or have heard of any thing that should make it more unhealthy this year than in former seasons; and since the sickness I have had twice the number of hands at work I had before."—*Jackson's Letter.*

Same side.—"But it is also said that the boarding houses allotted to the workmen were excessively crowded. The number of houses at the Wallabout, situated within about one third of a mile of ground, is eight; of these, seven are two story houses, and five are double houses, all of them sufficiently roomy for the families that occupy them. The whole number of workmen at the yard, at the time the fever appeared there, was about twenty; of these one lodged at Mr. Middletons'; seven at Mr. Helme's, three in the house with himself, and four in an out house; two at Mr. Little's; from four to five at Mr. Rhodes'; at Mr. Titus's two; at Mr. Goodridge's one, and at Mr. Martin's one. As to the number of workmen stowed in single rooms, I have not been able to discover that it was in any instance inconvenient; the greatest number that have slept in one room has been four, all of whom have remained in health."—*Same Letter.*

"To show the manner in which these unhappy workmen were stived up, so that the poor fellows engendered, and indeed could not but engender yellow fever, Dr. Daniel D. Walter is brought forward. This diffident young gentleman tells us that he does not want to hear any discussion of the question of importation; to show however, that it was not imported, but originated in the house of Mr. Helme, he has undertaken to give us the precise dimensions of Helme's house, every way, to a single foot, and as his ill-stars will have it, he is not

right in any one particular: he has also undertaken to give us the number of lodgers, in which the same bad luck attends him, for he has not stated the number right in any one room, excepting the outer kitchen. He says, in a letter to Dr. Rodgers,

" You wish to be informed of the number of inmates dwelling in each house. In Mr. Helme's house, which consists of two rooms, each fifteen feet square, and two, each eleven feet square, and a very small kitchen, in all five rooms there lived twenty-four or more persons, twelve of whom or more have constantly slept in the two lower rooms, eight or more in the two upper, and four or more in the kitchen."—Walter's Letter.

" Suspecting, from what had fallen under my own observation, that the doctor was a little mistaken, I wrote to the occupant for information. The following is an extract from his answer.

" The house I now occupy is two stories high, containing two large rooms sixteen by eighteen feet, one in each story, and two small rooms ten by twelve; besides this, there is a kitchen in a separate building fourteen by fourteen. At the time of the fever there slept in the lower part of the house, myself and wife, Mr. Dring and wife and his four children, and my two daughters. In the upper rooms slept Mr. Leeds and wife and two children in one room, and two men, boarders, in the other room; and four boarders, workmen, slept in the kitchen, making in the whole, twenty persons, which then composed the family. Yours,

SIMEON HELME."

" Our unfortunate doctor happens not to be exactly right in any single item; and this may be all a very innocent mistake; I doubt not it is; though, it also happens that every error is on the side of exaggeration. But we will let that pass.

" There was but one instance of a family at this ship-yard enjoying the comfort of apartments sufficiently spacious and commodious in proportion to their number, and these all preserving good health, while the neighbours around them were sickening and dying."

“ In support of the same curious and instructive fact, is the following extract from Doctor Daniel T. Walter—

“ It ought to be observed before quitting this subject, that Samuel Middletons’ family, consisting of six persons, have lived during the whole sickly season at the Wallabout, in the north-east end of Mr. Helme’s house, next the water, and of course nearest the vessels, and have enjoyed an uninterrupted state of health ; but Mr. Middletons’ family occupies exactly half the house, which gives six persons, in one instance, as much room as nearly thirty enjoys in the other. If, however, the fever was derived from the vessels solely, this circumstance ought to be of no avail, and Mr. Middletons’ family ought to have been the first to have taken it.”—Walter’s Letter.

E. contra.—“ The deponent saith, that he has two windows, one below and one above, opening eastward, on the line of the navy-yard, but the lower window has been cut since the fever.”—*Middletons’ Deposition.*

“ As Helme had a lower window before the fever, opening east on the navy-yard where the brig La Ruse lay before she was moved, and Middletons had not, this might account for Helme’s family taking the disease and Middletons’ escaping. If, however, this should not be thought satisfactory, then take the following extracts, in answer to the statement of the Repository, that “ Middletons’ family all preserved good health,” or, as Dr. Walter says, “ uninterrupted health.”

“ The former of whom [Brown] was taken with the yellow fever on the 21st, and the latter, who boarded in the deponent’s house, was taken on the 26th.”—*Middletons’ Deposition.*

Same point.—“ On the Wednesday following, to wit, on the 20th, the deponent found himself attacked with pain in the head, back and limbs, on which he told Mr. Middletons that he hoped for the best, but he felt just as he formerly did when he had the yellow fever ; soon after he was attacked with it, and was sick about three weeks, when he recovered. And the deponent further saith, that he boarded in the house of Mr. Middletons, adjoining the house of Mr. Helme north-east, and under the same room.”—*Brown’s Deposition.*

“ The quantity of animal and vegetable filth overspreading the ground, and lying about the boarding houses, taken in connexion with the other circumstances of the place, was sufficient to generate great mischief. No

plan of properly cleansing the yard seems ever to have been adopted; of course this filth has been progressively accumulating, and becoming more dangerous ever since the establishment of this place was first undertaken."—*Medical Repository*.

E. contra.—"The ship-yard is as clean as ship-yards usually are, any where, nor is there any animal filth or vegetable filth lying about or near it, so as to cause any kind of inconvenience to any person in the place; and further saith not."—*Helme's, Jun. Deposition*.

Same point.—"Nor has he ever perceived that the yard was less clean, or the ground about it, than other ship-yards in New-York."

Brown's Deposition.

Same point.—"And the deponent further saith, that he never experienced any inconvenience from dirt or filth lying about the yard or the houses, nor saw more than is usual at ship-yards."—*Livingston's Deposition*.

Same point.—"And the deponent further saith, that there is not nor was at the time of the appearance of the fever, or at any other time this summer, any animal or vegetable filth overspreading the ground at the ship-yard or round the boarding houses near it, but that it is and has been as clean as the ship-yards usually are in New-York."—*Rhodes' Deposition*.

Same point.—"During the present season, the ground of the ship-yard, and the grounds about the houses, have been, and are as clean as is customary, as clean as other ship-yards are, and as the former ship-yard used to be; that all the time the deponent has been so occupied before and during the late fever, and since, he has never observed any thing of so filthy a nature as to cause the least inconvenience to the persons residing there."—*Randel's Deposition*.

Same point.—"And the deponent further saith, that the ship-yard, with which he has been acquainted for seven years, has always been in a clean and healthy state, and as clean the present year, since it was removed to Jackson's wharf, both before and at the time of the fever, as it ever was when it was kept at the navy-yard on the other side of the fence."—*Wakeman's Deposition*.

Same point.—"And the deponent further saith, that he never observed that the ship-yard, or any of the ground about it, was in a more dirty or filthy state than is customary at other ship-yards, and such as is caused by the quantity of dry chips that lie loose about the vessels."—*Wright's Deposition*.

Same point.—"I have been at the yard almost every day, but I have never discovered that the ground of the ship-yard was dirty, more than what was caused by dry chips lying about, nor have I seen any more filth of any sort than is usual about houses in such country places."—*Jackson's Letter*.

Same point.—"My first object was to examine the state of the houses, with respect to cleanliness, and I had the satisfaction of perceiving that the inhabitants had not been negligent in regard to this important article. The rooms, which had been occupied by the sick, had been thoroughly cleansed, and the houses whitewashed; nor did I see any thing offensive in the vicinity."—*Ibid*.

"To the above I may add, that from the view I had of the situation of the place, the information I received from different individuals on the spot, and an unbiased reflection upon the whole in my own mind, the result is, that I perceived no cause existing there, which, in my opinion, could have produced malignant fever."—*Letter from the Secretary of the Health Committee.*

Same point.—"I walked over to the ship-yard and down to the wharf and about it, and could perceive nothing that could give the least cause of suspicion, nor did the situation of the houses, or of the adjoining grounds, furnish to my mind any cause for the appearance of the disease."—*Dr. Lord's Letter.*

"The number of persons at this place was sufficient to carry on the work of building two large ships, and of occasionally repairing others. Yet these workmen did not possess the convenience of a privy, the want of which must have added exceedingly to the accumulation of filth. When all these facts are considered in connexion with the local circumstances of the spot, which rendered ordinary ventilation impossible, it will not appear strange that a malignant disease should have been generated at this place."—*Medical Repository.*

E. contra.—"You ask me if there are privies, because, as I presume, the Medical Repository account asserts, 'the workmen did not possess the convenience of a privy, the want of which, they say, must have added exceedingly to the other sources of the accumulation of filth.' There is a large privy at Helme's house, close by the ship-yard, but the truth is, the workmen do not use it, because the wharf extends so low as always to have more or less water, and during both rising and falling water, has a strong current running by it, and the men go down there. You can judge, sir, whether this 'can add exceedingly to the other sources of filth.'"—*Jackson's Letter.*

"One would suppose from this that the situation, in respect to privies, had the advantage over almost any other, and must be remarkably inoffensive in this particular.

"But this affair of the privies is not the least curious in our curious medical account. To understand it, I must remind the reader, that it is now some years since the advocates for domestic origin, in their search after causes of yellow fever in the United States, added to their list, *privies and new made grounds.* The moment the yellow fever appears in any of our cities, these zealous gentlemen run about the neighbourhood inquiring after privies and new made grounds; and, as the epidemic has, heretofore, always appeared on some of the wharves of the East river,

there has never been any difficulty to discover at once both privies and new made grounds. As soon as the fact is put beyond question, they *go their way rejoicing* at the discovery of another piece of testimony in favour of domestic origin. Thus, after it had been well ascertained that the fever actually existed at the Wallabout, they went over in pursuit of privies and new made grounds ; those two never failing sources of *septic acid vapour*. As soon as they got there, they saw it was in vain to look for new made grounds, and, they next inquire after sinks and privies ! when behold there are none ! What's to be done now ? One gentleman, more candid than the rest, acknowledges, that finding the absence of this, and every thing else that could be justly considered as a local cause, he felt himself compelled to relinquish an opinion that had been unshaken for years. Such conduct is honourable. Not so with the editors of the Medical Repository ; these great champions of domestic origin, meeting with neither new made ground nor *privies*, wheel right about, and declare that the disease was caused by the *want* of privies. “ The want of a privy, quoth the Medical Repository, must have added *exceedingly* to the other sources of the accumulation of filth,” and “ it will not appear strange that a malignant disease should have been generated at the place.”

“ Dr. Miller, the Resident Physician, to whom Dr. Rodgers, the Health Officer, referred his Honour the Mayor, for more particular information respecting the Wallabout than he could give, because Dr. M. had been on the spot, (though, by the way, so had the Health Officer, as appears from Mr. Jackson's letter) chose, it seems, to make his communication in form of an article for the

Medical Repository and Review. This Medical Repository and Review is an octavo volume, respectable for its size, and imposing in its appearance, and it circulates not only throughout the United States, but several copies go annually to Europe, where it is read by the faculty there, as the work of the most eminent medical men in this country. In such a work, professedly undertaken for the purpose of exposing the ignorance, correcting the mistakes, and detecting the misrepresentations of others, surely the public have some right to expect at least a little more than usual attention to accuracy in itself. What then will be their surprise, and how must it affect the reputation of the work, that the only article, (and that on a favourite subject too, where more than customary care would be expected,) which has been subjected to a rigid criticism, is found to be, not merely, very often wrong, but never once right ! But we have not room for multiplying observations of this sort ; we hope, indeed we feel very confident, that the editors of the Medical Repository have some way of accounting for this, beyond what we know of ; especially, since they are so loud and so frequent in charging other gentlemen with fabricating “ gross and glaring mistatements.” But, at any rate, this detection of their errors should teach them a little more caution in future, inspire them with a little more modesty, and render them a little less presumptuous in their attacks upon gentlemen whose characters, private and professional, stand as fair and as exalted as their own.

“ As Dr. Rodgers has thought proper to mention the *weather* as one of the causes of yellow fever at the Wal-labout, I here present the reader with a transcript from a table of meteorological observations, beginning eight

days before the disease appeared, and continuing till the day on which the last "new case" occurred.

THERMOMETER.

9 12 3					9 12 3				
June	12	65	60	59	June	22	68	68	69
	13	67	71	74		23	70	72	74
	14	70	71	72		24	72	76	78
	15	66	72	77		25	69	69	71
	16	70	76	76		26	69	72	76
	17	72	76	80		27	75	79	81
	18	77	80	83		28	78	80	83
	19	74	76	74		29	70	76	78
	20	67	67	67		30	71	72	75
	21	68	68	68	July	1	64	68	68

"By inspection of this table it will be seen, that excepting four days, the weather was even below "summer" heat," and in no instance was the heat excessive.

"Having shown that the origin of the epidemic is not to be accounted for from any of the causes assigned by the Health Commissioners, neither from the "air, soil, or weather ; local situation of the Wallabout ; the position of the houses, or the materials surrounding them ;" all of which are pointed out by the Health Officer : Having *proved* that, in all these respects, whatever has been advanced, has been, throughout, 'gross misrepresentations,' we are necessarily driven to seek for the origin of the disease in the other, of the only two assigned causes ; namely, vessels recently arrived from the West-Indies. As there are but two causes, foreign and domestic, to which the disease can be attributed, if it appears that there was a total absence of one, sound logic would warrant me in leaving it here, and saying, that as it is not of domestic, it must necessarily be of

foreign origin ; at any rate, a very slight degree of proof ought, in this case, to be admitted as competent and conclusive. To the vessels, then, let us now turn our attention.

“ I begin with the schooner Greyhound. She arrived, as appears by the newspapers, on the fourth of June, Dr. Rodgers says the second, (this is not very material,) after a passage of sixteen days. What day she was suffered to come up to the Wallabout is no where stated. On the 18th, it appears, her bilge-water was pumped out on the south side of her, she then lying to the windward of the Wallabout, at the distance of one hundred, or one hundred and fifty yards. The Health Officer says, that while she was at the quarantine ground, “her bilge-water was *completely* pumped out, and the water from the pump clear and free from smell.” It may be so ; had the Health Officer said he saw this with his own eyes, it would not have been decorous to have doubted it ; and though this schooner, as I am informed by the owner, is so remarkably tight, that she is said not to leak at all, yet as we know that all vessels leak more or less, I shall admit that she was pumped out at the quarantine, and that the water which came from her so black and with such an intolerable stench after lying some days at the Wallabout, was what she took in while she lay there. And I desire no other concession than this in favour of my argument. But before I proceed to the inference, I must go on a little further with the Health Officer’s letter. “ *All the ports,* (says the Health Officer,) from which the vessels now in the Wallabout, or which have been there since the first of June, sailed *from*, were, at the time of their respective departures, in *great* health.” “ Guadaloupe too (says he)

was very healthy when La Ruse sailed, and had been so for a long time before."

" I acknowledge it is extremely difficult to obtain from captains of vessels, or any of the crews, the truth as to the health of the port they sailed from. They all think they are perfectly justified to make use of any sort of misrepresentation, nay, if it is absolutely necessary, some of them think they may back it with an oath, to evade the irksome operation of quarantine laws. Hence, in some parts of Europe it has been found, by experience, necessary to punish such misrepresentations with death ; nothing else being found adequate to restrain them. All this, however, is as well known to the Health Officer as to me, and his experience should have taught him to speak with some sort of diffidence. Yet he not only informs us that all the ports were in health, but "*great health.*" To make it still stronger, the editor of the Repository undertakes to say, that " it appears from *incontestible evidence*, laid before the public by the Health Officer, that the vessels in question came from ports which were in a very healthy state." Now I say no " evidence" at all has been laid before the public by the Health Officer. He has said, indeed, that the ports were healthy ; but this we know is only information derived from others ; derived too, under strong temptation to deviate from the truth, and, after all, it does not appear what his information is, from whom derived, or how authenticated. He has "laid nothing" of this sort before the public. I say, Messieurs Editors of the Repository, in direct contradiction of you, that he has *not* laid *incontestible* evidence before the public, and to call it so, is a palpable perversion of language, calculated to make an

impression, wherever your book is read, materially wide of the truth.

“ I suppose I am not expected to send to the West-Indies and get depositions there ; though I am sorry it has not been in my power to do so. I shall however give the best evidence the nature of the case admits of. First then, an extract from a southern newspaper.

“ Died at Cape Francois, on the 16th of June, of the *yellow fever*, Mr. Edward Moulson, late Merchant of this place.”

“ Making proper allowance for the time Mr. Moulson was sick, and supposing that the fever had been so long in the place as to have been prevalent before he sickened, the Cape, at the time of the departure of the Greyhound, could not have been in great health. As to the case of La Ruse from Point-Petre, I have been fortunate enough to meet with the captain, who was so candid as to give me some important information. He informs me, and has signed his name to the information, that “ *Before Captain Storey sailed, he understood some cases of the fever had occurred at the place.*”* ’Tis true, he adds, that the disease was not so ‘prevalent,’ as that it could be called a ‘*sickly port*!’ but this I must beg permission to say, is only setting up opinion against fact. What is a ‘*sickly port*’ is the most vague of all things. How many cases of sickness, or how many deaths, or how wide spread must be the fever before the place can be called a sickly port? The fact is stated, clearly and undeniably, that the disease had made its appearance before the brig sailed, after having lain there about six weeks. The next important fact is, that, on the eighth day after her departure, one of

* Vide page 294.

the crew sickened, and the next day, another ; one recovered and the other died, after three days illness. “ *His bedding and all his clothes were thrown overboard with him.*” This is always the case when the deceased is supposed to die of a contagious disease. The bedding and clothes of Jack, however, (the other person who was sick,) were not thrown overboard ; but preserved and brought into port. The following paragraph appeared in the Aurora of the 10th inst.—

“ We understand that our Board of Health, perceiving that persons in many vessels from Point-Petre were affected with yellow fever, have, during the last two months, subjected all shipping from thence to a rigid quarantine, and we now deem it our duty, for the sake of the health of the other ports of the United States, to declare from authority that the Board yesterday received official information of the prevalence of the yellow fever both on shore and in the port of Point-Petre.”

“ This, I think, shows pretty conclusively what sort of fever had begun to prevail there before the departure of La Ruse ; indeed, the captain did not deny to me but it was the *yellow fever* ; and the short time the cook lay sick, with the circumstances of destroying all his clothes and bedding prove, in a manner equally satisfactory, that he died of the prevailing epidemic.

“ After this I shall submit it to the Health Officer, whether he ought not to have expressed himself with a little more caution as to the healthiness of the ports of Cape Francois and Point-Petre ; and I shall ask the editors of the Medical Repository, what are their real notions about attempts to abuse public credulity, or whether they think a man may do it without any offence against propriety or morals, provided only he does it on the right side—that is to say, in behalf of *domestic origin* ? But to proceed—

“ I now come to the situation of the vessels after their arrival. The Health Officer says the brig was clean, free between decks, nothing in the hold but stone ballast, and this free from smell ; and that this ballast was thoroughly washed and cleansed. Dr. Bayley, he says, found all the vessels at the Wallabout in such a situation as to warrant him in saying “ no evil could possibly have arisen from them.” He, however, saw one barrel of tainted beef, which he ordered to be thrown overboard. It is also added, that none of the crew or passengers of the brig have been sick since her arrival. This opinion of Dr. Bayley, I hope, by the way, is not to be considered as *incontestible evidence* ; and therefore, for the present, I will lay it out of the case.

“ We have now the circumstances of these two vessels pretty well before us. They, both, were from ports where the yellow fever prevailed ; and had the Health Officer been as well satisfied of this at the time he permitted them to come up from the quarantine, as I have no doubt he is now, I venture to say, he would not have permitted it. He was, unquestionably, in the first instance, deceived, and I am sorry that he or his friends should think it necessary to persist in circulating a statement to justify him on a supposition that he was not. The vessels, then, were from ports where a malignant fever prevailed at the time of their departure. But at the quarantine ground they were as well cleansed as washing could cleanse them. And will washing cleanse a vessel on board of which contagious diseases have prevailed ? That it will not, I shall produce their own authority, I mean the authority of the Medical Repository.

“ On the 27th of June, 1800, the United States ship General Greene, sailed from the Havanna for America.

On the 31st of July she was moored in Newport harbour. On this occasion the Repository says :

“ Every customary method of preserving purity of air, and the health of seamen had been assiduously observed. The ship was freely ventilated, scoured, white-washed, sprinkled with vinegar, and the nitrous fumigation particularly recommended by Doctors Smith and Patterson, was frequently excited between decks. But notwithstanding all these precautions, and the still more favourable circumstance of her arrival in a more northern latitude, there was one man attacked on the day of her leaving the Chesapeake, (July 11th) with a highly malignant fever, which terminated on the fifth day ; and on the day after his attack, another was seized similarly, and died in eighteen hours.”—*Medical Repository*, v. 4. p. 235.

“ In short, it was the case where a ship’s crew after being healthy at sea, are attacked as soon as they get into port with decided yellow fever. It was proposed first to send her down to quarantine, but a temporary abatement of the disease induced the inhabitants to give up this rigid proceeding ; the vessel was therefore suffered to remain, but was hauled from the wharf into the stream, and the sick were sent off as fast as they were taken ill, to a distant hospital. I need hardly add, that the consequences were, that, in a little time, the yellow fever was introduced into the town of Newport. Yet does the correspondent of the Medical Repository, as to that case, say, “ It is impossible to reduce to satisfaction the opinion that *all* the cases were derived from the ship, since some occurred wherein the patients had no communication either with the ship or any who had the disease.” It is added, that “ soon after the offensive filth, which collected between the ship’s ballast, was, with it, removed, and the ship properly cleansed, no instance of fever occurred on board her.” I believe it must be admitted that this ship had been more, much more thoroughly cleansed than the brig La Ruse, yet was it all insufficient until after the ballast had been removed.

“ There is one circumstance in this Report which arrests attention, as it is precisely in point with the very case before us, in reference to the Greyhound at the Wallabout. And as one fact is always worth a volume of the best arguments on earth, it will save us a world of controversy with Dr. Mitchill about the nature of infectious poison chemically dissolved in caloric; or the qualities of pestilential air, formed from *septic* materials, by a *septic* process, thereby creating a *septic* gas; which may diffuse and spread itself through the atmosphere, after the manner of hydrogen gas, or carbonic acid gas; I say all this chemical learning must vanish before a well attested fact. In the same account of the fever at Newport from this correspondent, I find the following recorded.

“ Notwithstanding these prudential cautions, other inhabitants who had worked on board the ship, and in particular, *one young man and two boys who had bathed near her at the time her BILGE-WATER was pumped out*, were attacked with the disease and died.”—*Id.* p. 236.

“ Now it is in evidence, that in the first six cases that occurred at the Wallabout, every person taken sick, complained of the shocking smell of the *bilge-water* of the Greyhound, or the Greyhound and La Ruse, for both were pumping at the same time, and that it was so very offensive as in some to cause qualms. Well, but, says one, this is evidence not of foreign but domestic origin; for the water was made while she lay at the wharf. I shall ask then, why the filthy bilge-water, which is every day made by the hundreds of vessels lying at our wharves, and near them, does not produce the same effect? Can it be believed that the vessels in question, after being so thoroughly cleansed as they were, would cause an epidemic fever, if they had not some peculiar

quality existing in their holds, among their ballast, or adhering to their timbers? But, says the Health Physician, the crews and passengers were all healthy. In answer to this I must once more take the liberty of opposing the authority of the Medical Repository itself.

“ It [sickness] may affect only the crew and disappear; or *the crew may sustain it, uninjured, by a habit gradually formed, and the first effects be felt by healthy, unhabituated persons in the first port she visits.*”—*Medical Repository*, v. 2. p. 86.

“ Supposing it may be more satisfactory to the reader to have the precise fact laid before him as to the effects of the *bilge-water*, mentioned in my last, I here extract from the several depositions what the witnesses have, each, said.

“ And the deponent further saith, that the evening before Philip Dring was taken, he told this deponent that he never in his life smelt any thing so very bad as the smell from the vessels; meaning the brig La Ruse and the schooner Greyhound, which lay at a little distance from the wharf, but which had been pumping out their bilge-water, and that he heard Mrs. Little make a similar observation.—*Helme's Deposition.*

Same fact.—The deponent further saith, that when the brig La Ruse lay at the navy-yard, the schooner Greyhound lay at about one hundred or one hundred and fifty yards distant from the wharf, and while there, on the morning of the 18th or 19th of June, as the deponent was at work in the ship-yard, he perceived a most shocking smell to come from the water, the wind then being about north, and looking up he observed the schooner was pumping out her bilge-water, which was the cause of the smell. At this time Philip Dring and Isaac Brown both complained to the deponent very much of this offensive smell, and the latter was obliged to leave his work in consequence, and go and get a drink of brandy and water; in a day or two afterwards they were both taken with the fever.”—*Helme's Jr. Deposition.*

Same fact.—“ The deponent on either Saturday the 16th, or Monday the 18th of June, was addressed by Philip Dring, who was at work on the stern of an adjoining ship, and asked what was that nauseous and disagreeable smell, to which the deponent said it was the bilge-water then pumping out of the schooner Greyhound, which lay, as near as the deponent can judge, about one hundred and fifty yards to the windward, or that it came from the brig La Ruse, which was also then pumping out her bilge-water, and which lay within about thirty yards of where the deponent was at work. The effect was so disagreeable that the depo-

ment got off the stage and went and got a glass of brandy and water. And the deponent further saith, that he heard Mrs. Little complain of the bad smell of the bilge-water, and that she asked him what it was that smelt so bad at the time he went up and got the brandy and water.”—*Brown’s Deposition.*

Same fact.—“The deponent further saith, that he well remembers that on the 18th of June, he was in the ship-yard in the morning, when the Greyhound was pumping out her bilge-water, which smelt excessively nauseous; he heard both Dring and Brown complain of it.”

Middletons’ Deposition.

Same fact.—“On the 18th or 19th of June, as he was at work one morning in the saw-pit, he was struck with a most dreadful smell, which he perceived to come from the bilge-water then pumping out of the Greyhound, lying about one hundred, or one hundred and fifty yards from the wharf.”—*Livingston’s Deposition.*

Same fact.—“The deponent further saith, that he was at work with Philip Dring, on the stern of the new ship, when the smell of the bilge-water was so nauseous and offensive to them all, and when Dring spoke to the deponent and asked him what was the cause of such a dreadful smell? The deponent looked toward the schooner Greyhound, and saw her pumping out her bilge-water, and he saw the water come out so very black as to turn the water black at her side.”—*Wakeman’s Deposition.*

Same fact.—“James Cassils, of lawful age, being duly sworn, deposeth and saith, that he was one of the labourers who worked at the Wallabout as ship-carpenter, and was in the yard on the 18th of June, when he perceived a very disagreeable smell to come from the vessels, and looking towards the schooner Greyhound, saw she was pumping out her bilge-water, which seemed to be the cause of it.

“And the deponent further saith, that on the 20th of June he was taken with the yellow fever.”

Same fact.—“Samuel White, of lawful age, being duly sworn, deposeth and saith, that he was one of the ship-carpenters who worked at the Wallabout, and was in the yard on the 18th of June, when he perceived a very disagreeable smell to come from the vessels, and looking towards the schooner Greyhound, saw she was pumping out her bilge-water, which seemed to be the cause of it; and the deponent further saith, that on the 20th of June he was taken with the yellow fever.”

“There have been two other causes of disease found in those vessels, or at least one of them; namely, the spoiled beef, and the foul ballast of the brig *La Ruse*.

“It is admitted by the Health Officer, that Dr. Bayley saw “one barrel of beef on board the brig which was in an unsound and tainted state, which he immediately ordered overboard.” Yet it is said that Dr. Bayley found the vessels in such a state, as to “warrant him in saying,

that no evil *could possibly* have arisen from them." After what these domestic gentlemen have so repeatedly told us of tainted beef's producing disease, I must be permitted to express a little surprise at the positive manner in which Dr. Bayley is stated to have given this opinion. Let us turn to what the Medical Repository has said of the effects of tainted or spoiled beef. In the same article, entitled, "State of the weather and diseases" in 1799, we find them thus expressing themselves—

"Yet, notwithstanding the duration and intenseness of the winter, there were instances of disease, now and then to be met with in the city of New-York, caused by *septic* effluvia. A number of these could be traced directly to the remains of the *spoiled or tainted beef* of the preceding season, sold at auction during the cold weather," and "used for food in its semi-putrid state."—*Med. Rep.* vol. 3. p. 63.

"Again, in the same volume is an article entitled, "Septic acid vapour, extricated from corrupting *beef*." The article is too long to transcribe; but the intention of it is to prove that "the acid quality of the putrifying flesh, and of the gas flowing from it," was the cause of a number of deaths at Burling-slip, in 1798. Lastly, to prove demonstratively that the septic acid vapour of a single barrel of spoiled beef, even when standing in the open air, will give the yellow fever itself, they have published a long letter from Tunis Wortman, Esq. showing that while the epidemic raged in New-York, with a degree of violence and mortality never before or since witnessed, Mr. Roorbach caught the same disease by frequenting a foot-path every day, within six or eight yards of which stood a barrel of spoiled beef. See *Med. Rep.* v. 3. p. 402. I confess I do not believe that spoiled beef will ever communicate the yellow fever, unless it comes from a place where that disease exists; but with the correctness of these gentlemen's notions on this subject I do

not here meddle : yet, methinks, after labouring to prove that *spoiled beef* has produced, and will produce yellow fever, it is not very like consistency, for them now, because this beef is found on board a vessel that has somehow been permitted to come from the quarantine ground, to insist that no evil could possibly arise from it. Nor is it calculated to give us a very favourable impression of the candour of the editors of the Medical Repository, that in the whole of their elaborate article, they have never once mentioned the fact of the tainted beef : heretofore, according to them, the primary cause of pestilence and death. But I suppose tainted beef brought from the West-Indies is not so unhealthy as that which spoils in our unfortunate climate ; nor possesses any of that deadly *septic acid vapour* which the pestilential air of New-York produces.

“ It only remains to consider the foul ballast of the brig La Ruse ; which, of course, must make foul bilge-water, and which is, in itself, and has always been considered one method of communicating pestilence.

“ To guard against the frequent source of yellow fever from the noxious air in the holds of vessels, we recommend the unloading such vessels as contain cargoes liable to putrefaction, and the discharging the ballast of all vessels at a distance from the city.”—*Letter from the Philadelphia Academy of Medicine.*

“ This I give the more cheerfully, because the Academy are great sticklers for domestic origin ; and because I am able to support it by another authority, which in the opinion of the editors of the Repository will be thought, I presume, equally respectable ; I mean their own. In their review of Caldwell’s oration, on the origin of pestilential diseases, having observed that he ascribed much mischief to the foul air emitted from the putrid *ballast* and damaged cargoes of vessels, they add ;

" We are not disposed to controvert; on the contrary, we admit the frequent production of cases of pestilence from *this* source."—*Med. Rep.* v. 3. p. 60.

" But the Health-Officer says, the ballast of the brig was washed " till the water came from her as pure, as clean, and as free from smell, as the water of the ocean." To this, admitting the fact to be precisely as stated, the answer is furnished by the case of the General Greene, as quoted yesterday from the Medical Repository. In that instance, every possible method of cleansing was resorted to; the ship was " freely ventilated, scoured, white-washed, sprinkled with vinegar, and fumigated," yet, until the ballast was removed out of her, it answered no purpose. But in this case the Health Officer tells us, that neither Capt. Wadsworth nor Capt. Chamming's could perceive any disagreeable smell on board her; and that he himself went up on the 26th June, and " attentively examined the vessel and ballast, and could perceive no evil, or detect any disagreeable smell or effluvia in her;" and that the ballast, which was brought to quarantine and unloaded, he has " passed over again and again," nay, that he had even " handled and smelt to it," but could detect no evil. As his learned friend, Dr. Mitchell, has demonstrated in an ingenious pamphlet, published some years ago, that " though pestilence may be accompanied, *evidently*, with *stench*; yet its most formidable effects are felt when neither the sight nor the *smell* give *any evidence* of its presence," I cannot for my life see why Dr. Rodgers should make such a point of smelling to this ballast, especially after it had been removed from the brig, landed at Staten-Island, and had lain exposed to the weather I don't know how long. But let us see how our *evidence* stands as to this—

“ And the deponent further saith, that he heard Capt. Chamming say, that when he opened the hatches and went down the hold of the brig La Ruse, there was a very disagreeable smell, but that he conceived it to be no more than what had been caused by the confined air of the hold, and therefore did not mind it. And the deponent further saith, that he heard Benjamin Brown, the boatman employed in taking out the ballast of the brig La Ruse, say, that the ballast, when he first began to take it out, smelt very bad, but he thought it was owing to the closeness of the hatches, and was not at all afraid.”—*Randel's Deposition.*

“ Same fact—

“ The deponent saith, he heard some of the persons employed in unloading this ballast say, that it was so very offensive, they could not throw out but a few stones at a time, without being obliged to put their heads up the hatchway, to obtain a breath of fresh air.”—*Helme Jun'r's Deposition.*

“ But here two other difficulties present themselves. First, That some of the worst cases commenced *before* her ballast was started. Second, That the brig lay at such a distance from the house where the first case happened, as to render it morally impossible that any contagion could have been communicated, supposing her to be really embued with contagion: But let us give the objections in their own words.

“ La Ruse hauled first to the navy-yard, where she lay till the 23d of June, when she moved to the wharf where the Generous Friends and the Union lay, and opposite to the house where a woman sickened on the 20th, and died on the 24th or 25th. She lay there without discharging her ballast, or even touching it, till the 25th.”—*Rodgers' Letter.*

“ Same side—

“ It was asserted, in particular, that the disease appeared *after* the discharging of the ballast from the brig La Ruse, which was just mentioned; but it is ascertained that three or four of the worst cases commenced *before* this ballast was removed.”—*Medical Repository.*

“ Same side—

“ The statement in question [of the three physicians] appears to be incorrect in the following parts: ‘an idea is meant to be held forth that no one sickened *before* the ballast was discharged, which was not the fact.’—*Walter's Letter.*

“ Pretty formidable, certainly ! but as it has so happened, that not one fact hitherto asserted has turned out as was stated, it naturally inclines us to hesitate throughout. Let us then go once more to our evidence ; by which I mean, not the loose sayings of individuals or of officers, but the deliberate declarations of persons under the solemnity of an oath.

“ Simeon Helme, of lawful age, being duly sworn, deposeth and saith, that he has lived with his family at the Wallabout since March last, as master builder of the large ship now on the stocks at Jackson’s wharf ; that he well remembers when the brig La Ruse came up from the quarantine ground, and hauled along side of the wharf at the navy-yard, where she discharged part of her ballast *before* the sickness broke out ; that some days *after* discharging the first load of ballast, Mr. Philip Dring, son-in-law to the deponent, was taken with the yellow fever.”

“ Same fact—

“ Simeon Helme, Jun. of lawful age, being duly sworn, saith, that he, the deponent, remembers when the brig La Ruse first came up from the quarantine ground, and hauled along side the wharf at the navy-yard, which was, according to the best of his recollection, about the twelfth of June ; that a few days *afterwards*, and *before* the sickness appeared, this brig began to unload her ballast at the navy-yard.”

“ But, it is asserted, she lay at a great distance from the house where the first case occurred, meaning Mr. Helme’s—

“ It was farther asserted, that the brig in question lay *close* to the house of Mr. Helme, in which one of the most malignant cases commenced on the 20th of June : whereas there is the best evidence that this vessel lay at the navy-yard of the United States, a distance of more than 150 yards from the spot referred to, until the 23d of the month, when she moved to the wharf near Mr. Helme’s house, a day or two *after* some of the malignant cases had commenced.”—*Medical Repository*.

“ Let us now see how much this *hundred and fifty yards* of the Medical Repository amounts to, by “ actual admeasurement.”

“ And the deponent further saith, the said Philip Dring lived in the same family with himself, and slept in an adjoining room with

his wife and child," "but that the door of the room adjoining, which was a large room of 18 by 16 feet square, was always kept open. And the deponent further saith, that this large room had a window that opened into the navy-yard, at the wharf of which the brig *La Ruse* lay when his son-in-law was taken sick, and within *thirty yards* of this window by admeasurement."—*Helme's Deposition.*

"But, from the following extract, it will appear that Dring constantly worked in a place still nearer the brig—

"And the deponent further saith, that Dring worked every day on the stern of a ship on the stocks within about twenty-five yards of where the *La Ruse* lay at the navy-yard, and used to go repeatedly to a blacksmith's shop to get iron-work, within eight, or, at most, ten yards of the brig."—*Helme's Deposition.*

"Any one, from reading the statement of the Medical Repository, or that in the Health Officer's letter, would suppose that the navy-yard and the ship-yard were distant from each other, whereas, only a fence is the line of separation; separation as to boundaries, but an air-line as to atmosphere.

"And the deponent saith, that after unloading one sloop load, for some cause, she [*La Ruse*] desisted, and on the 23d she moved *about her length westward* to Jackson's wharf, which is only separated from the navy-yard by a fence."—*Helme Junr's Deposition.*

"It is also ascertained, that no person of those taken sick was on board either of the suspected vessels.

"It does not appear that a single person of those attacked with this malignant fever had been on board either of the vessels charged with the importation of it, or held any communication with them, or any thing belonging to them."—*Medical Repository.*

"Neither of them [Livingston and Arbutton, who both had the fever] had ever been on board *La Ruse*; Livingston had once been on board the *Union*, and *no other vessel*."—*Rodgers' Letter.*

"Edward Livingston, of lawful age, being duly sworn, deposeth and saith, that on Tuesday evening, the nineteenth of June, as nearly as he can recollect, *he went on board the brig La Ruse*, then lying at the wharf, to get her boat to bring up a log that lay in the stream, and on the twentieth he was taken down, in the evening, with the yellow fever; in consequence of which, he was sent to the Marine Hospital, after being sick a week, and where, after about five weeks, he recovered."

“ Lastly, it is stated—

“ It deserves also to be mentioned, that a large proportion of all the victims to this disease, and some of the earliest, were *women*, whose occupations did not lead them to the wharves, who were employed within doors.”—*Medical Repository*.

“ It will be seen by turning to the list of those who were attacked by the disease, the whole number was seventeen, of whom, eight only were women ; of these, four died, viz. Mrs. Little, Mrs. Sherlock, Jane Johnson, and Sally Wakeman.

“ But in answer to the attempt to show that the women had no communication with the brig that could account for their taking the disease, I shall now show that not only these, but all the cases that occurred, are traceable directly to one or both the vessels.

“ The first set of cases were Brown, White, Livingston, Castles, Mrs. Little and Dring ; of these six, all complained of the offensive smell of the bilge-water the eighteenth of June, and five were taken with the fever on the 20th, within forty-eight hours afterwards ; the sixth, Dring, was seized the day after. Besides this, Simeon Helme, jun. swears that—

He “ frequently saw Mrs. Little, the woman who was first taken ill and died, down upon the wharf near where the brig *La Ruse* lay, and near the brig, looking for her child, which used to play about the wharf.”

“ On the twenty-second, Mrs. Sherlock was seized, and besides the probability that she visited the sick, (for I give it only as such, since it is only mentioned to me and is not in evidence) her husband has deposed that—

“ She frequently went to the dock of the navy-yard, where the brig *La Ruse* lay, to pick up chips ; the rooms where his wife, three children and self resided, were large, on the second story, had the benefit of a free and pure air from all quarters, being nearly surrounded with running salt water.”

“Jane Johnson, who was taken on the twenty-third, lived in the house with Mrs. Little, and nursed her. William Arbutton, who sickened on the twenty-eighth, slept in the same bed with Livingston after he was taken ill. Sally Wakeman who sickened on the twenty-ninth or thirtieth, visited the sick at both Helme’s and Little’s, as appears from her brother’s deposition. Benjamin Rhodes, who sickened on the twenty-ninth, has deposed that “he visited the sick every day” till he was taken ill himself. George Little, Mrs. Dring, and Patty Helme, all sickened on the thirtieth; the former had attended on his sick wife, the two latter on Mr. Dring; and Hannah Helme, attacked July first, was the last person taken, and had been exposed in a similar manner. These three last, it is worthy of remark, were attacked after their removal to a place called Vinegar Hill, more than a quarter of a mile distant, s. e. and their disease is stated by the father to be yellow fever, and not dysentery, as asserted by Dr. Walter. Patrick Prosay is the only person unaccounted for. All inquiries after this man have been fruitless; all we know is, that on the twenty-eighth of June, at a meeting of the Health Committee, in answer to their inquiries about his situation, which they had by some accident just been informed of, the Resident Physician said that Patrick Prosay “was better;” and in the Medical Repository article, he is said to be a labourer who “had quitted the ship-yard and made his way into the city.” Thus the public have a history of every case, and of the circumstances attending the occurrence of each; all traced up to one source. Three causes are proved to have existed, all of which, probably, operated, but either of them, if I mistake not, has appeared sufficient to account for the introduction of the

epidemic, viz. the bilge-water, the spoiled beef, and the foul ballast.

“ I have now finished my promised investigation ; and in the course of it have presented a series of facts, which to me appear interesting, important, and conclusive.”

Such was the case of the Wallabout, and such the evidence respecting it. More than seven years have elapsed since this evidence has been laid before the public, wholly and completely disproving every material fact stated in the account which first appeared in the Medical Repository ; yet have not the editors of that work ever had the candour, we will say, the integrity, to correct that account, or even so much as to mention to their readers that a different one had appeared. How such behaviour, in the conductors of such a work, can be reconciled with fair-dealing towards the public, we must confess ourselves at a loss to comprehend. It was in reference to this case of the Wallabout, that we seriously asked, and now repeat the question, “ What must the public think, what ought it to think of a literary work, which, in the guise of openness and truth, publishes important mistatements of material facts, and when it is afterwards convicted beyond all doubt, of having done so, continues, notwithstanding, to circulate these mistatements, and to propagate a doctrine founded upon them, most momentous in its consequences upon society ?”

To return once more to the Essay under review :

“ The occurrence of similar diseases in other parts of the world, under similar circumstances, where *contagion introduced from abroad cannot possibly be suspected*, is also adverse to the doctrine of importation. In making the circuit of the globe, on the parallels of latitude nearly or exactly corresponding with our's, we pass over countries, which, from the earliest records of history, have been frequently visited with the ravages of disease. *Spain and Italy afford striking examples.*”

The observation here made respecting the parallels of latitude, is anticipated, and completely answered, in a letter to the editors, in the first number of volume first, entitled, "Conjectures concerning the Native Climate of Pestilence, by an OBSERVER."

Dr. Miller introduces *Spain* and *Italy* as examples to show, that when the yellow fever prevailed there, "contagion introduced from abroad *could not possibly be suspected.*" Has Dr. Miller then wholly forgotten what he has himself recorded in several volumes of his own Repository? Has he forgotten the Spanish work of Dr. *D. Roque Josè de Oyarvide*, which he has so ingenuously reviewed, beginning thus: "Dr. Oyarvide professedly and zealously maintains the contagious nature of yellow fever, and, *like other persons who advocate the same side of the question*, either mistakes facts, or reasons badly upon them." Or has he forgotten the *Report* on the subject of quarantines, made to Congress by his coadjutor, Dr. Mitchill, as preserved in the same 6th vol. where Dr. Mitchill utters the following complaint?—"The recent accounts of the severe quarantine of an hundred days, and more, imposed upon American vessels in some of the principal ports of *Spain*, must fill every friend of our commerce with regret." And yet Dr. Miller has the courage to declare, that in Spain, "contagion introduced from abroad could not possibly be even *suspected.*" Has the Doctor forgot the article in his 4th vol. facetiously entitled, "Retaliation on the importers of yellow fever," in which he informs us, that "for fear of suffering from contagion, imported from the United States, our ships are subjected to quarantine and their consequences in all the ports of Europe?" In fine, can Dr. Miller have totally forgotten the great and valuable work, entitled,

"*Precis Historique de la Maladie qui a regné dans l'Andalousie en 1800,*" and reviewed in his 8th vol. ? It contains no less than 800 octavo pages on the yellow fever which prevailed in Cadiz and the Spanish province of Andalusia in the year 1800, and is the result of the personal investigations of three of the most eminent French physicians of the day, who were appointed as commissioners by the French government for this express purpose. In 1802 they published their discoveries, which were examined and sanctioned by the faculty, approved of by the governments of both France and Spain, and have, ever since, served as a guide to the proper authorities in the precautionary measures taken to guard against the introduction of this pestilence. "In this investigation, (says a much esteemed medical correspondent) made at a time when the disease was scarcely extinguished, and with the greatest industry, caution, and discernment, the commissioners have established the three following points :

" 1. That the disease was of foreign origin, having no affinity with any of the known indigenous diseases ; such as the putrid marsh or malignant bilious fevers, of the summer and autumnal seasons, so common to all the south of Europe.

" 2. That it was evidently contagious : not, like an atmospherical epidemic, displaying its influence by a sudden and rapid extension, striking its objects in different and distant directions, at the same time ; but attacking, in regular order and succession, individuals, families, the inhabitants of the same or adjacent streets, towns, and villages ; not, like an endemic which attacks those only who have been exposed for some length of time, to some local, insalubrious, noxious source, and which vanishes with the removal or destruction of that source ; but like those diseases universally known to be contagious, attacking only those who have intercourse with the infected, directly or indirectly, sparing but few in its progress, except where precautionary measures were observed against it.

" 3. That, in all its symptoms and circumstances, the disease was the same as the pestilential yellow fever of the West-Indies, and of the United States."

“ The commissioners, also, traced its origin distinctly and satisfactorily to an American vessel that had arrived at Cadiz from Havanna, in the preceding July, which had lost some of her crew by the fever at sea. From this vessel the infection was communicated, first, to some of the waiters and officers of the customs, who had been placed on board, who carried the disease into the city, from whence it gradually spread in almost every direction. Into what weakness, (observes the editor of the above French work) especially on medical subjects, have not men been betrayed by theoretical enthusiasm? Prejudice, passion, or the weak ambition of acquiring a name distinguished above their professional brethren, or competitors, make men, sometimes, embrace strange and extravagant opinions without due examination, which their pride or self-love forbids them ever after to *renounce*.”

Dr. Miller, in order to lessen the credit of the above work, with an air of importance, observes upon it—

“ Now, the reader of this publication ought to understand that the three professors arrived so late in the season at the sickly region, *that the distemper had disappeared with the cool weather of autumn before their arrival, and that they did not see a single case of it.*”

That it was necessary to see the disease, in order to judge whether it was yellow fever or not, might possibly be asserted with some, but not much plausibility; but that fact not being in question here, why a case of it should be actually seen, in order to enable the inquirer after its origin to judge of the applicability and the force of evidence, we have never heard, nor can we conceive: Certain it is, that many of those non-contagion lay writers quoted by the Medical Repository, with the highest applause, such as Noah Webster, Esq. and others, never saw a case of the dis-

case ; and we have heard it questioned whether Dr. Miller's learned colleague himself ever saw a case of it. Dr. Miller, however, we observe, hopes the reader will not yield too much credit to the three physicians, because, as they only arrived just after the extinction of the disease, their statement of facts ought to be received with distrust. It is, however, fully expected that we should believe the Doctor himself, who was this side the Atlantic, and neither saw a case, nor ever had an opportunity to acquire any personal knowledge of the facts whatever. Who can sufficiently admire the modesty and consistency of this gentleman ?

So much for Spain. As to Italy, where, he also asserts, no contagion from abroad could possibly be suspected, we will go no further for proof to the contrary than to the Med. Rep. in the 8th vol. of which, p. 429, we find " An extract of a letter in Leghorn, beginning thus :

" The late fever with which we have been visited, I am persuaded, is the same as the American yellow fever. *It has been proved, beyond the shadow of doubt, that it was imported from South America, in a ship laden with hides, which touched at Cadiz to recruit its hands, having lost several on the passage. The captain died of the fever in a short time after his arrival.*"

It is true, the Repository contains also other extracts of other letters, expressing a different opinion. But the above is produced here, in answer to Dr. Miller's assertion, that contagion in Spain and Italy has not even been *suspected*. We now see in his own pages, a direct contradiction to this assertion staring him in the face : we here find, that it has not only been suspected, but, if the writer deserves belief, proved.

We must now travel with him to Rome, ancient Rome, and combat him in the arena there.

As another example that, "in making the circuit of the globe, on the parallels of latitude nearly or exactly corresponding with our's, we find countries, which, from the earliest records of history, have been frequently visited with the yellow fever," the city of Rome is adduced.

"Rome, in particular, though its elevated situation is generally salubrious, is annoyed by a marshy spot at the feet of two of its hills, along the margin of the Tiber, which has been sickly and pestilential from the origin of the city. While the streets on the hills, like Broadway and other high grounds in the city of New-York, enjoy a salubrious air, the spot of marsh just mentioned, together with a small extent of *made-ground* (for the noxiousness of *made ground* has been felt at Rome, as well as at New-York) corresponding with the marshy spots, and vastly more extended space of *made-ground*, along the margin of the East river, has produced, from time immemorial, malignant and mortal epidemics."

In support of this statement, Dr. Miller quotes Baglivi and Lancisi, two celebrated physicians and medical historians of the 16th century, and he also quotes Ovid, always much admired as a poet, but now, for the first time, adduced as historical authority. The following lines are given to prove that the "noxiousness of *made-ground* was felt at Rome: "--

"Hoc, ubi nunc fora sunt, udæ tenuere paludes,
Amne reduntatis fossa madebat aquis.
Curtius ille lacus, siccas qui sustinet aras,
Nunc solida est tellus, sed lacus ante fuit.
Qua Velabra solent in Circum ducere pompas,
Nil præter salices, cassaque canna fuit."

On looking into the original, we find the poet introduces a decrepid old woman, who undertakes to narrate the important changes in the face of the country, that have taken place in her day; which brings us to the quotation before us: she recollected, she says, the time when, in the spot before them, where the courts of justice stood, there was once a large ditch or canal filled with water, which flowed into it from the Tiber; when the *Curtius Lacus*,

which then was solid earth, and supports a temple for worship, was once a common lake ; when the temporary artificial lanes, through which it was customary to lead solemn processions to the circus, presented nothing to the eye but willows and useless reeds. If more'than this is to be found in the passage, or the context, it has escaped our research ; if there is any thing that, in the most remote degree, can be supposed to relate to the "*noxiousness of made-ground*," or to *made-ground* at all, we have not been able to discover it.

Dr. Miller and his fellow-labourers on the same side have, forever, been harping on "*marsh miasmata*" as the cause of a vitiated atmosphere, and they persist in charging the yellow fever of our cities on this "*marsh miasmata*." Well, the city authority take them at their word, and they order all these marshes (which, by the way, are situated in places where no yellow fever has ever yet appeared ; the Collect and Lispenard's Meadows) to be filled up ; and for three years they have been filling accordingly, until, as Ovid says, "*Nunc solida est tellus, sed lacus ante fuit*." And now the same complaint is heard against the *new made-ground*, as was heard against the former marshes ; they now declare that it is the *new made-ground* which causes the yellow fever. There is also much *made-ground* on the East and North rivers. The filthy slips have been filled up with sound and solid earth ; the mud of the bordering shore, which used to be left bare at low water, is left so no longer, but is covered by *new made-ground*, and neat, cleanly wharves. Against this the non-contagionists clamour louder still. It is this *new made-ground*, say they, which breeds yellow fever. In vain we point to our eastern shore, and remind them that, in 1741, that shore was mowed for

sedge, in the recollection of some of our oldest inhabitants, and that, at that very time, long before *made-ground* was thought of, the yellow fever made its fatal appearance, and became dreadfully epidemical. Equally in vain we remind them that it is more than six years since the disease showed itself among us, although, during all that period *made grounds* have been constantly going on, until there are acres now to feet then ; in vain we point across the East river, to the Wallabout, and tell them there are *no made-grounds there* ; to Brooklyn, and tell them there is but a very small portion *there* ; across the bay to Amboy, and tell them there is none at all *there* ; still our ears are stunned with the cry against *made-grounds* and marsh exhalations. “ Here is an incongruity, say we : If marsh exhalations cause pestilence, the way to meet it, and prevent those exhalations, is, surely, to cover over these marshes with a hard, dry, solid, and deep gravelly soil, is it not ? ” “ No, says Dr. Miller, that will be *made-ground*, and Rome suffered much from the noxiousness of *made-ground* ; vide Ovid.” “ But you non-contagionists, we rejoin, will not contend that the same effects are produced by two opposite causes, wet ground and dry ground ? ” “ Certainly we do ; have I not told you already, that, “ *We live in a latitude of pestilence*, and our climate is only beginning its tendency to produce this terrible scourge ? ”

Baglivi and Lancisi are also quoted by Dr. Miller for the same purpose. We have carefully examined both these authors in the original Latin, and now are compelled to contradict Dr. Miller on the fact : we do deny, first, that either of them contain the most remote allusion to *made-ground* ; and, secondly, that either of them describe any disease that can be identified with our yellow fever. They mention, indeed, fevers, which, however, they

ascribe, not to dry *made-ground*, but to causes directly the contrary. “ Quæcunque loca (says the former) crebris ædificiis ambiuntur, atque editiora sunt, in septentrionem atque orientem spectant, et multum à Tiberi distant, salubriora : Contra, quæ sejuncta sunt, et remota à frequentibus tectis, situque sunt humili, ac maximè in convallibus, tum propria Tiberi, in meridiem atque occasum spectantia, minus salubriora judicantur.” Is there even an allusion here to *made-ground*? So too Lancisi: “ Nemo sane luctuosa funera per id temporis Romæ conspiciens, fœtoremque in vicis illis persentiens, dubius hæsit, quin causa malignarum, perniciosarumque febrium, quæ publice vagabantur, fuerit multitudo stagnantium et corruptarum aquarum, tum in scrobibus pratorum, tum in magna cloaca, atque in fossa potissimum Hadrianæ arcis.” Will any one, who can read the Latin tongue, say that *made-ground* is here once mentioned or alluded to, in any manner whatever? Certainly not. But, we would ask Dr. Miller, on which authority it is, that he asserts that our yellow fever ever appeared at Rome? In the first place, no pathognomonic symptoms of the yellow fever are mentioned, and, if it were otherwise, Dr. Miller has effectually precluded himself from saying that they are the same with those which characterize the yellow fever; for he has expressly declared in the Essay before us, that the yellow fever has *no* pathognomonic symptoms. If he will turn, however, to Baglivi’s chapter “ *De febribus in genere*,” he will find the author, in section the first, expressing himself thus: “ Ante septimum diem in acutis, et inflammitoriis, nec purgato, nec diaphoretica vehementia dato.” But before the seventh day of the yellow fever arrives, the time for exhibiting medicine, or affording relief of any sort, is for ever past. As

it is hardly to be supposed that Dr. Miller has totally forgotten his Latin, what, in the name of charity, can we say for him? Great, indeed, must be his assurance in thus venturing to quote authors in a dead language, unknown to the majority of his readers, in support of a theory which those authors never dreamt of. If Dr. Miller can reconcile his conduct with his notions of strict integrity, he must have formed his ethics in a very different school from any that we ever knew or heard of, ancient or modern.

We finish what we have to say on the subject of *made-ground*, by asking Dr. Miller how it is, that neither that part of the city known by the name of *The Collect*, surrounded as it is, and partly covered by houses, nor that known as *Lispenard's Meadows*, much of which is already built upon, and the rest in a train of being occupied with houses, although both consist entirely of *made-ground*, the former once covering a deep pond, the latter an extensive marsh, how is it, we ask, that the yellow fever has never first made its appearance in either of these places, nor even in their vicinity? Till Doctor Miller can better reconcile theory with fact, he may certainly spare himself the trouble to caution the people of this city against the noxiousness of *made-ground*, as a cause of yellow fever.

“The source of mistake (he says) on the subject of importation, seems to consist in not distinguishing *a febrile poison generated by heat and filth in a vessel, from contagion taken up in a foreign port, and successively communicated from one person to another.*” “The construction of vessels disposes them to the collection and retention of filth, and renders cleansing and ventilation extremely difficult. The qualities of cargoes and provisions, the inattention of seamen to cleanliness, the crowded manner in which they live, &c. &c. render shipping the most dangerous of human habitations. It is no wonder, therefore, they should become unhealthy, when they pass into warm latitudes, or lie in our harbours in the hot season.”

Unquestionably the market-boats, which fill our slips during the summer, are the filthiest of all sailing "human habitations;" yet, if the resident physician should go aboard, and assure the proprietors that they bred the yellow fever in them, we suspect he would scarcely escape being heartily laughed at. But, pray what became of these filthy vessels during the fifty years preceding 1795? But to make the answer short, we call upon Dr. Miller, or his colleague, to mention a single instance, a single one, where the yellow fever has ever shown itself on board of any vessel lying in any harbour of the United States, and not recently from a port within the tropics. We confidently defy him to point out a case. When he does so, and substantiates what he says, then shall we feel compelled to abandon all that we have ever contended for.

"The inefficacy of all the various modifications of quarantine laws hitherto devised in the United States, confirms our disbelief of contagion. In the port of New-York, as well as that of Philadelphia, a rigid system of quarantine has been in operation for many years; and *there is no doubt of its having been vigilantly and faithfully executed.*"

Is it indeed so? Have the quarantine laws been hitherto inefficacious? Have they always been vigilantly and faithfully executed? This Review, then, has been written to very little purpose. We are egregiously mistaken, however, if it has not appeared, in the course of our researches, that the exemption of this city, for several years past, has been solely owing to a better modification of our quarantine law, which was amended in 1804, and a better execution of it. We are mistaken, too, if it has not been equally made to appear, that the misfortunes of the Wal-labout, and of Brooklyn were wholly owing to a want of "a vigilant and faithful execution" of the quarantine laws. But what, we ask, could be expected from the vigilance and faithfulness of a Health Officer who does not

believe the yellow fever is either an importable or a contagious disease? Would it be reasonable to expect a man to be active and vigilant in preventing the spreading of a fire who did not believe that a fire existed, or could communicate itself? Ought it rationally to be expected that a physician, though exalted into a Health Officer, could vigilantly execute a law, providing against the introduction of a pestilential yellow fever, who does not know the disease when he sees it, from an intermittent?*

Or that another was capable of executing satisfactorily the duties of Resident Physician, for the purpose of ordering out of the city, the first case of yellow fever that makes its appearance, who holds the same theories as the Health Officer, and who, also, does not know the disease from a common cold?† We say, boldly and fearlessly, say, because we feel it to be our duty to do so, that to commit the execution of our health laws to gentlemen thus professing a theory directly at variance with that which constitutes the basis on which those laws are founded, is a gross absurdity, and no better than a mockery of the community. Political considerations may be allowed weight in appointments to office on ordinary occasions, but when they are permitted to outweigh every other, in cases where the lives of thousands, and almost the existence of our commercial cities, are at stake, it is an evil most deeply to be deplored, and its authors deserve the bitterest reproaches.

“ Under the influence of this phantom of contagion, (says Dr. Miller, we have instructed the Europeans to enact laws and regulations, sanctioned by the highest penalties, which retard and oppress our commerce, and subject our shipping in their ports to the most grievous detention.”

* Vide page 298.

† Vide page 280. 301.

If Dr. Miller could show that those Europeans stand ready to relinquish their quarantine laws and regulations, as soon as he convinces us that "contagion is but a phantom," and the yellow fever "a misfortune limited to ourselves, and cannot endanger their safety;" if, we repeat, he could satisfy us that they will, in complaisance to us, repeal their quarantine laws, the moment they hear of our repealing our quarantine laws, there would be something in his argument. Or, at least, there might be something, were it not for the appearance of the following passage in the same Essay :

"In rejecting the doctrine of importation the benefits of quarantine are, by no means, intended to be undervalued. The generation of pestilential diseases in foul vessels is undeniable." "There ought undoubtedly to be some mode of ascertaining whether a vessel may be safely approached by people in business, or whether she may be likely to diffuse pestilential vapours among all who come within their reach. Quarantine is, also, one of the most humane regulations in favour of seamen. It interposes between them and the carelessness or cruelty of their commander, and make it his interest to preserve their lives and health."

If the doctor is sincere in this, quarantine laws are highly valuable in themselves, and in all parts of the world, without reference to contagion, or to yellow fever, or to the United States. "The generation of pestilential disease in foul vessels (he declares) is undeniable; they are a frequent source of malignant sickness," and "quarantine is one of the most humane regulations as to seamen," &c. Now then, we should be glad to know what the Doctor really means? He charges the advocates of importation and contagion with being the cause of quarantine regulations in foreign countries, "which retard and oppress commerce, and subject our shipping to grievous detention," in one page, while in the next he declares, that quarantine regulations are, by no means, intended to be undervalued; and gives several reasons

why they are not to be dispensed with. As we have always thought that the main design of Dr. Miller's Essay was to persuade the public that quarantine regulations were highly injurious to commerce, and ought to be for ever abandoned, we were somewhat at a loss to find him thus a strenuous advocate for their continuance. Nor could we have acquitted him of a palpable inconsistency, had we not fortunately recollected there was still one powerful reason more, which Dr. Miller's modesty has kept back, viz. "because *my brother R—— is Health Officer, and —— Resident Physician.*"

Having reluctantly laid so heavy a claim on the reader's patience in this attempt to expose the errors of fact, and the false reasonings connected with them, that so eminently distinguish an Essay, which we have always considered one of the most mischievous tendency, our Review, at length, approaches its close. Thinking we cannot do better than to finish by reminding the reader of those leading opinions on the subject that has so long occupied our attention, we beg permission to repeat what we have once said in an early number, by way of explaining what we mean by the contagiousness of yellow fever. By the contagiousness of the yellow fever then, we mean the communication of it, *under certain peculiar circumstances*, from one person to another, or from things to persons. By *communication*, however, we do not mean, first, that it is to be conveyed only by touch, like the itch or syphilis; nor, secondly, by touch and through the medium of a pure atmosphere, like the small pox and measles; but, thirdly, we mean that it is conveyed from a diseased person to those in health, or from infected materials to persons in health, under circumstances of an atmosphere of peculiar impu-

riety, and under such circumstances only. "The yellow fever, like typhus, jail, ship, hospital or lake fever, and dysentery, is a disease *only* communicable through the medium of an impure atmosphere ; in a pure air, in large and well ventilated apartments, when the dress of the patient is frequently changed, all excrementitious discharges immediately removed, and attention paid to cleanliness in general, these diseases are not communicated, or very rarely so, from one to another. But in an impure air, rendered so by the (presence of a foul or infected ship) decomposition of animal and vegetable substances, such as takes place in low marshy countries, or by concentrated human effluvia, as in camps, jails, hospitals, or on ship-board, they are rendered not only extremely malignant and mortal in themselves, but become communicable to others who approach the sick, or breathe the same atmosphere which has become assimilated to the poison introduced, insomuch that the same specific disease is communicated, whether it be the plague, yellow fever, typhus, or dysentery."* But neither is it every kind of impure atmosphere that will form a medium for conveying this disease; but it is that kind of impurity which has become "assimilated to the poison introduced by the disease." Hence, therefore, a single person may be ill of the yellow fever in even an uncleanly lodging, but of which the air has not become *assimilated* to the poison of the disease, and if care is taken to change the patient's dress, remove excrementitious discharges, and in case of death to destroy the bedding and purify the apartments, the disease may not be communicated to any

* Hosack on Contagion. Vide *Edinburgh Medical and Surgical Journal*, for October, 1809.

others in the house. With these explanations and qualifications we adhere to the opinions we have long since formed, which we have more than once published, and which we have never re-examined without increased confidence in their soundness. Should we be correct in those opinions, it follows, that instead of looking for the origin of the yellow fever in our gutters, or made grounds, or in a peculiar constitution of our atmosphere, or in our "latitude of pestilence," or in the "septic acid engendered by us, [unhappy Americans !] within our own alimentary canals,"* is a contagious disease, brought hither in vessels from infected places abroad, and that, in order to prevent this terrible scourge from ever again appearing here, and desolating our city, nothing is wanting but a system of good and wholesome quarantine laws, faithfully and vigilantly executed. Give us this, and we have no hesitation in saying that the city of New-York will be as secure from yellow fever, as the city of Albany or the village of Utica.

To conclude. It is probable that some of those who have done us the honour to peruse this Review, may have thought we have not always restrained our feelings of indignation as much as we might have done, without any deduction from the weight of the argument. To such, if such there are, we offer in answer, the following passage from a controversial work of a celebrated English divine.

"Perhaps I have used a quickness of language by which my more *gentle* reader may be hurt in his feelings. But let the gentlest of my readers reflect, that such a

* Vide Med. Rep. v. 6. p. 424.

manner is unavoidable, from the nature and circumstances of controversy. All controversy is, in the literary world, what all war is in the political, an evil necessarily incident to the wretchedness of our present state. In war such acts are lawful, as would be criminal out of it. Blows and wounds *then* become licensed outrages. Just so it is in controversy. A tartness of remark, a harshness of reprehension, and a provoking pointedness of triumph, are all as lawful as blows and wounds in war. War cannot subsist without these. Controversy cannot without those. And to fight fairly without wounding, or to controvert fairly without hurting, are equally impossible."

An apology may, possibly, be expected of us for this Review, after the very able Letter of Dr. Chisholm to Dr. Haygarth, on the same subject, "*in order to correct the pernicious doctrine promulgated by Dr. Edward Miller,*" &c. It was not that we had the vanity to think that we could add to the arguments of Dr. Chisholm; never for a moment did we suppose that this great man and vigorous controversialist, needed such assistance as our feeble pen could afford—"non tali auxilio"—but the superior advantage we possess in residing amidst the principal scenes of action, enabling us to controvert many important statements in point of fact, which he was compelled to take for granted, or combat upon conjecture, we felt impelled to glean after him, proud of such a leader in this great cause of truth and humanity, though too conscious of the *haud passibus æquis* with which we must follow him. Far from being insensible to the distinguished merits of this celebrated man, we see the master's hand conspicuous in every thing he touches. An erudition the most profound, a logic correct and luminous, conveyed in a style elegant, nervous and classical, signalize and

adorn the pages of this eminent physician, this fine scholar and accomplished gentleman ; and if such qualifications, under the constant guidance of a nice sense of honour, which, while it renders its possessor sensibly alive to every indignity, preserves him from the smallest trespass on decorum, can insure lasting fame, the name of Chisholm shall not only wear the honours of the age in which he lives, but his laurels shall bloom perennial.

Without meaning to be understood as uttering the language of triumph, we now seriously call upon Dr. Miller to come forth and defend his elaborate Essay against the foregoing Review ; or if the doctor himself has neither leisure nor inclination for such an undertaking, we trust that the reviewers,* who say in their last number of the " New-York Medical and Philosophical Review," they " are so perfectly satisfied with Dr. Miller's Essay, that nothing, as they apprehend, more satisfactory can be offered in the present state of our knowledge," will step forth in their own defence. We should be happy to meet either or all of these gentlemen in the field of fair controversy. The gauntlet is thrown for any who choose to take it up.

* Drs. M'Nevin and Smith.

Account of the Malignant Fever that prevailed in the United States and West Indies during part of the year 1819.

IN the last number of the Recorder, a brief notice of the malignant fever that prevailed in several cities and towns in the United States was given; and a promise was made to furnish more ample details of it, in this number. This promise shall now be performed.

Of the fever, in Boston, that prevailed partially in September, we have no official documents except as to the number of deaths by it. These are stated in the annual bill of mortality, to be 32. The term used is "*malignant fever*:" one hundred and eight are said to have died of typhus, and ten of bilious fever. It is highly probable that several of the cases thus named, ought to be included under the first head. Eighteen died in the hospital at Rainsford's island, including those who were sent from Boston, and who arrived sick in vessels which were under quarantine.

The disease appeared in New York in the latter end of August, at the Old Slip and vicinity, East River, near to the same spot in which the yellow fever commenced in 1798. The first publication on the subject by the Board of Health, was on the 7th September, when they wisely recommended to the inhabitants of the infected district specified by them, to remove; and to purify the yards of their houses, their gutters, and privies, by a free use of lime. The assistants of the Board of Health, together with the city inspector and assistants were also required to examine every house and lot, within the limits described, and to cause every place capable of adding to the contamination of the air to be purified by a free use of that excellent article, just named. Vessels also were required to be removed from the wharves of the infected district, viz. included between Pearl street, the East River, Coenties Slip, and Wall street.* This decisive conduct of the

* It appeared from publications in the newspapers of the day, that the vicinity of the Old Slip abounded with the materials of putrefaction: that it

Board called forth much censure, as is common on such occasions, from the inconsiderate or selfish. The alarm was considered "premature," and certificates of attending physicians were published to show that the diseases of which the people that caused the alarm had died, was merely the common bilious remittent fever of the season. The destruction of the commerce of the city was predicted from the terror which the official declaration of the existence of the fever would cause; some persons refused to evacuate the infected spot; one man, (Boggs,) with consistent obstinacy, after being removed by order of the mayor, returned, and shut himself up in the house with his family, where he remained unknown, until discovered dead on the 19th September. One or two melancholy cases occurred of highly worthy and valuable citizens losing their lives in consequence of resolutely frequenting their counting-houses every day in the vicinity of the Old Slip; they also publicly denied the existence of any danger, and freely censured the Board for their publications. On the 8th, a detailed statement of the deaths that had been reported to them was published by the Board of Health: and it is to be regretted that some of the reports of the medical men, were of a nature to distract, and mislead the Board by their ambiguity and want of precision, had not the Board been composed of men of a decisive character, and not disposed to be led away by fine spun distinctions between "highly suspicious diseases," "of diseases having the appearance of yellow fever, but that exhibited symptoms of bilious remittent fever, and that were attended with an unusual degree of malignancy." The Board of Health made this very sensible remark on the subject of their preventive regulations. "Measures of precaution, when attended with present inconvenience, are always unpalatable, (unpopular,) and they usually become most so, when completely successful. It

was the abode of a condensed population, and the resort of a vast number of sailors; and that the houses were destitute of yards and other conveniences necessary to receive excrementitious deposits. The Slip was described as the receptacle of dead carcasses, and of every variety of animal and vegetable offal.

frequently happens that their failure is received as their best justification." They continued to make daily reports to the public of the progress of the fever, and on the 10th of September, called upon the physicians to attend to the law which requires their reporting in writing to some one of the health commissioners, all patients under their care, labouring under malignant fevers. Dr. Dewitt, the health officer of the port, died on the 11th of September, at the quarantine ground, of a stroke of the sun. On the 18th of September, the Grand Jury of the city and county of New York, presented as nuisances several places, and remarked, "that while such *prolific sources of fevers* are suffered to exist, no precautionary measures for the health of the city can be efficacious in preventing disease, or in arresting its progress." They particularly specified the bottom of several streets, and a lot in the north of the city; the Old Slip and vicinity; the Fly Market; Peck Slip, "and the last, yet not least," "Roosevelt Slip," which was stated to be "in a most shocking and filthy state." The Fly Market, they remarked, is built over a common sewer, which has no covering under the meat market, except the market-house floor, which is loosely laid, and on the sides of the market are a number of apertures into the sewer, which are receptacles of filth and garbage from the adjacent taverns, fruit stands, and cook shops, creating offensive and pestilential effluvia, and infecting the atmosphere.

On the 18th, much alarm prevailed, and great numbers moved from the vicinity of the Old Slip.

On the 20th, the Board recommended proper measures to be adopted to ventilate, cleanse, and purify the houses which had been vacated. They judiciously specified the good old-fashioned remedies of scrubbing and whitewashing; and advised the free use of lime in cellars and privies; the removal of all substances liable to putrefaction. The acid fumigations they very properly left to those who chose to use them.

On the 21st, the Board stated, that with the exception of three sailors, there has not been any one who has taken the disorder out of the district designated by the Board in their resolu-

tion of the 6th of September; and those who have taken the disorder there, and have sickened and died in other parts of the city, have in no instance communicated it to their nurses or attendants, or to any one else. Two of the sailors alluded to belonged to the ship *La Florentine* from Martinique, the particulars of which it will be useful to record.

From the publication of the Board of Health, of the 25th October, it appeared this ship *La Florentine* arrived in July after a passage of 20 days from St. Pierre, Martinique. The yellow fever prevailed at that place at the time of her leaving it, and one of the passengers died with it there. She performed a quarantine of 30 days, underwent all the ordinary purifications, and on the 24th August, the Health officer reported that she was free from infection, and might be allowed to come to the wharves. The Board, however, ordered her to be anchored in the stream. In the beginning of September, two of the seamen were taken ill with the yellow fever, and she was sent back to the quarantine ground. From thence she went to sea; but having met with a storm, she put back in distress, on the 25th of that month, when it was found, that since her departure her captain had died of the same disorder.*

Another seaman came from the quarantine during the last illness of the health officer, and died on board a sloop at the wharf.

The infected district was now announced to be entirely evacuated. The poorer inhabitants were removed to Staten Island, and the sick sent to the vicinity of Hurl-Gate up the East river. The entrances of the streets leading through the infected district were fenced up, and the vessels at the adjacent wharves anchored in the stream. The most active measures were also taken to correct nui-

* The case of another vessel deserves to be mentioned, as shewing the permanence of infection, under certain circumstances, and the caution necessary to be used in pronouncing a vessel safe. "The brig *Eliza* arrived on the 13th August, after a passage of six days from Charlestown, S. Carolina, having on board a sick passenger, who died the same day with yellow fever. She performed a quarantine of 30 days, and was three times whitewashed and otherwise purified, and on the 6th September, she was allowed to anchor in the stream, yet on the 6th October her captain died of the yellow fever, and on the 17th one of her seamen sickened with the same disease."

sances, to purify such places as seemed likely to generate or exasperate disease, and generally to do whatever might tend to preserve the health of the city. The watch was doubled round the deserted houses; and the citizens were earnestly cautioned not to enter the infected district, "an imprudence which had proved fatal to several."^{*} The good effects of the judicious and decisive conduct of the Board, who acknowledge the able assistance derived from the mayor, Mr. Colden, were soon apparent in the speedy diminution of the number of cases reported daily by the physicians; and on the 25th of October they announced that "the danger which had lately threatened the city had disappeared." It ceased to appear after the 13th October. Their precautionary measures, they said, would have been complete "but for the imprudence of individuals. The incredulity of some, and the interest or folly of others, prompted them to visit the forbidden district. Several took the infection, and thus kept alive the disease, which would otherwise have ceased for want of subjects on which to prey." Of sixty-three cases reported, forty-three persons died of it† in the city, and at Richmond on Staten Island; a mortality, small when compared with that of other seasons in which this malady has prevailed. On the 23d Sept. a severe gale took place, and the water of the river penetrated the cellars of many houses in the infected district: had the inhabitants remained, the mortality would have been from that cause greatly increased. The Board were warmly urged to use the vile acid fumigations which were some years since cried up by the chemist Morveau of France, and Dr. Carmicheal Smith of London, as grand infallible destroyers of contagion; but they declined, and for the following sensible and substantial reasons. "They had seen in the instance of the vessels before alluded to, the difficulty of destroying infection; and admitting that the fumigations possessed all the efficacy ascribed to them, and that they might be successfully employed to purify a chamber or a house, yet it was at least doubtful whether more than 200 houses and stores, (many of the

* Cases of infection from a short visit to the Old Slip were mentioned in the last number of the Recorder.

† The whole number of deaths in the year 1819 (viz. 3176) was 80 less than in 1818.

latter filled with goods) could be so effectually purified as to render all of them safe. It was known that frost would destroy the disease; if the district remained without inhabitants till after a frost, no other purifier would be requisite, and to invite the inhabitants to return sooner, and to depend for security upon a process which in the case of so many buildings could scarcely fail through accident or unskilfulness to be unsuccessful in some of them, was an experiment which appeared too perilous to be sanctioned by prudence." The details respecting the fever in New York are designedly minute, because it is considered important to show the local origin of the disease, and because the conduct of the Board of Health will serve as a rule for the guidance of public authorities in the event of a malignant disease breaking out in other places.

In Philadelphia the first report of a disease of a "suspicious nature" was made to the Board of Health on the 2d July. Three cases were stated to exist in the family of Mr. Reeves, who kept a tavern on the north side of Market or High-street wharf. According to the account of Mrs. Reeves, her husband was taken ill on the 28th of June, and died on the 5th of July. He had been complaining for several days before his illness; on the 28th of June, after being much heated by working on board the steam ferry boat which plied between the wharf at his door and New Jersey, he came into the house and layed down on the floor in a draught of air. Being soon warned of the imprudent act by his wife, he retired to bed. Mrs. Reeves was taken ill the same afternoon: their daughter had been indisposed the preceding evening: all of them were removed by order of the Board of Health on the following Saturday, 3d of July, across the river to New Jersey, where Reeves died on the 5th; his wife and daughter were confined to their beds several days, but both recovered.

Isaac Geyhan, who was employed in a store on the wharf, and next door north of Reeves', had cut his ankle severely with a glass bottle, the latter end of June, and on the 1st of July he leaped into the water about two o'clock to save the life of a boy who had fallen off the wharf: after swimming about 30 feet he came out, and went into a damp alley adjoining the store, and while a

strong draught of air was blowing on him, stripped off his clothes, wrung them out, and then put them on again. He remained at the store until after sundown, when he went to his home in Brown street, Northern Liberties, and that night he was taken ill. He died the 6th of July.

Thomas, son of William Wray, who lived west of and adjoining Reeves' house, was taken ill on the 6th of July; on the 5th, which was a warm day, he had paraded with a volunteer corps to which he belonged, and dined with it at Kaighn's Point, New Jersey. He was removed by order of the Board of Health to the Schuylkill upper ferry on the 8th, and died on the 11th. A lad, James Hammon, in the same house, sickened on the 7th and died on the 9th. The remote causes of these cases of malignant fever may be rationally traced to the pestilential exhalations to which the subjects of them had been for some time exposed; derived from a collection of animal and vegetable matters* which Reeves had been accumulating for several months before his door, to manure some land he owned in New Jersey; and from a quantity of decayed vegetables which he had under his house, and had been left there by the country people, who came to market; and from a similar mass in the cellar of William Wray, and a narrow alley running parallel with his house, and to the north of it. The exciting causes of the disease in Reeves, Wray, and Geyhan, will be obvious from the facts stated above. A few days before the illness of Reeves he had superintended the removal of the mass of manure before his door on board a horse boat; the stench of which was so great as to annoy the whole neighbourhood, and among others, a member of the Board of Health, whose counting-house was to the north of Reeves. Prompt measures were taken by the Board of Health to purify the houses. More than a cart-load of an offensive collection was taken from Wray's cellar, and of putrid vegetables from under Reeves' house; and every part of both houses was well whitewashed, the families were removed and kept away several

* This consisted of oyster-shells, with a portion of the oyster left in them, garbage from the cleanings of fish in the adjoining market; decayed vegetables, and to these were added the sediments of the gutter that carried the water down Market-street, and settled on the heap.

weeks. The offensive alley north of their houses was washed by a fire engine.

A committee of the Board of Health, in their reply of 10th of July to the inquiries of Dr. Dyckman, who was sent by the Board of Health of New York to ascertain facts respecting the reports of malignant fever in Philadelphia, observe in reference to the cases on Market-street wharf, "All the sick mentioned were resident in the city, and the disease has not been traced to any vessel or any stranger arriving from abroad in the place." The fever now ceased on Market-street wharf, but several cases afterwards occurred in different parts of the city, and Southern Liberties, some of which, as being evidently produced from local causes, deserve notice. Three were reported on the 13th of July, at 51 South Water street: upon examination of the house and yard, they were found to be extremely filthy: three or four cart-loads of putrefactive substances were removed. On the 2d of August another case was reported in Jones's or pewter-platter alley; the cellar was found to be extremely filthy; two cart-loads of putrefactive substances were removed therefrom. Four persons were taken ill in Swanson-street, Southwark, whose diseases were evidently occasioned by the stench of three privies in the rear of the houses; three of these died. Others in Mead and Huddell's alley were reported by the attending physicians, who also informed of the nuisances existing in the vicinity of the sick.

The most unceasing attention was paid by the Board of Health to the evacuation of some of the houses in which persons had died; the removal and washing of their bedding and clothes, and the purification of all the infected houses, and the removal of every source of pestilential exhalation in the city and liberties, together with a strict vigilance as to the introduction of sick persons or of putrefactive substances from abroad.

The whole number of deaths by "malignant fever," in the city and liberties, recorded in the bill of mortality for 1819, amount only to 13:—126 are said to have died of typhus, 49 of bilious fever, 6 of intermittent fever, and 43 of remittent fever. Some of the four last forms may fairly be included under the first head, together with some of 33 said to have died of "fever,"

Simply, for all who have been familiar in the American pestilence know the proteus forms it puts on.

The disease appeared at Fell's Point, Baltimore, in the month of August, where, with the exception of Smith's wharf, and a few scattering cases, it was confined. That it originated from local causes, is the unanimous opinion of the district medical society, who in answer to an application from the joint committee of the councils of Baltimore, appointed to take into consideration that part of the mayor's communication recommending an inquiry into the causes of the late epidemic, say, "The malignant fever which prevailed at Smith's wharf, and at Fells Point in the summer of 1819, in the opinion of this society, is to be ascribed to the decomposition of vegetable matters. This opinion is supported by the following facts: 'The alley back of Smith's wharf has been filled up with dock-mud, shavings, and other putrescent materials. The same remarks will apply to the construction of Smith's wharf generally, and also to those parts of the Point where the fever first appeared. The immense mass of materials just adverted to, have been accumulating for many years: while the heat of the summer remained moderate, the destructive principle was only partially evolved: but the intense heat of the last summer reached the mass of perishable materials, and gave origin to the disease.'" The number of deaths reported in the bill of mortality by "malignant fever," is 350. But it is probable that of 73 called "*bilious*," and of 84 called "typhus" several might be included under the first head. When the decided character of the disease was ascertained, viz. on the 28th of August, the poor were removed from the infected district to the eastern extremity of the city and there encamped, under the direction of a committee of citizens.

In Charleston, South Carolina, the disease prevailed to a much greater extent than in the year 1817; in which year 270 died of it. The official statement of deaths, during the year beginning 1st of October 1818, and ending 1st Oct. 1819, return only 176 cases of deaths by yellow fever, but it is remarked that as the disease had not ceased at the time of closing the account,

those who fell victims to it on or after the first of October 1819 are omitted. The absurdity of making up a bill of mortality like a custom-house report from October to October, is so obvious, and leads to such inaccurate opinions as to the actual disease prevalent, and the number of cases of any particular disease in a given year, that the arrangement ought to be altered in future reports, and commence with January and close with the last of December. The number of deaths by bilious fever are reported to have been 19. It is probable that some of these should be added to the account of yellow fever.

At Savannah, in Georgia, it also prevailed, but almost entirely among foreigners recently arrived from Europe, among whom the mortality was great.

At Mobile the disease was highly malignant and fatal. After it had ceased, a committee was appointed by the comparatively few citizens, which the destructive fever had left, "to investigate the causes and extent of the sickness and mortality" at that place, who have published a report,* in which they prove incontestably, the local origin of the disease from the numerous and powerful sources of pestilential exhalation, that existed in the town. They particularly notice the wharves, which were filled up with rotten logs, bushes, shavings, and other vegetable matters, and covered lightly with swamp mud: Water-street filled up with the same kind of materials,—docks clogged with timber, old boats, sea-weed and other filthy substances in a state of decay, particularly under the stores standing over the water. They add, that the prevalent north wind in September and October, left the docks, and a large extent of marsh mud about them, exposed to the heat of the sun, and the water, variously obstructed, became itself stagnant and offensive.

They further notice several lots covered with stagnant water, and filled with offal substances; extreme neglect of cleanliness in the town; collections of dead animal and vegetable matter, increased by the hurricane on the 28th and 29th July; incessant rain from the 28th July to 11th September, succeeded by a hot sun for 66 days, and drought. For a while the disease seemed to

* 12 pages 12mo. S. Potter, & Co. Philadelphia.

be confined to those employed about the river and wharves, but in a few days after the 10th Sept. it spread rapidly through the whole town, and affected Creoles, inhabitants, and people of colour. About 274 persons died of it. The suburbs of the town were healthy; and no instance is known of the disease being communicated to persons out of the town by the removal and attendance upon the sick.

The facts detailed in the report referred to, while they prove to demonstration the local origin of the disease, furnish a severe but useful lesson to all emigrants in newly settled places, to remove the local causes of disease, and to prevent the occurrence of them, by attention to the mode in which their temporary accommodations are provided for.

The Mobile report also states, that at Baton-Rouge, Natchez, and perhaps generally upon the Mississippi, as high as the latter place, the same species of fever seems to have prevailed, as at Mobile, with great mortality; in the interior of the country, upon the waters of the Tombecbe and Alabama, the sickness and mortality was greater than was ever known before.

At Natchez, it was evidently caused, according to the information of a resident there, by the exhalation from numerous ponds formed in the course of the new regulations of the streets. About 250 persons died of it.

At New Orleans, upwards of three thousand are reported to have died of yellow fever during the past summer and autumn, and it was not until after the first of December, that a return to it or to the town of Natchez was deemed prudent.

In the West Indies, the fever prevailed with great mortality. The pestilential exhalations arising from the want of attention to cleanliness in the city of Havanna, aided by the uninterrupted heat of the climate, naturally account for it at that place, where late in January it still continued to prevail. But it is more difficult to assign a cause for it in the healthy island of St. Thomas, and the rocky town of St. George, Bermuda, in both of which places it was very mortal among strangers. In the vicinity of Cadiz in Spain, it is said to have been very fatal: but the particulars are not known.

An Account of the Fever which prevailed in certain parts of Baltimore, during the Summer and Autumn of 1819, with some remarks on its Origin and Treatment. By John Revcre, M. D.

ONE cannot help feeling surprise on observing the very opposite opinions at which men arrive on examining the same objects, and reasoning from, apparently, the same premises. Perhaps there is no pursuit in which this remark is more frequently exemplified than in medicine. This is no doubt in a great measure attributable to the nature of the subject, which does not admit of demonstration, but depends on the collective observation of many individuals, whose judgment is apt to be influenced by accidental circumstances, and preconceived opinions. When once we have adopted any set of doctrines we are too often disposed to adhere to them with pertinacity, and to abandon them with reluctance. We are too apt to feel as if our honour was concerned in defending them, and rather to seek for arguments to confirm our present impressions, than to make honest and disinterested exertions for the developement of truth. The contradictory opinions which are held concerning some of the most important, and, one would suppose, obvious characters of yellow fever, a disease of such frequent occurrence in our country that almost every practitioner has opportunities of studying it, are striking instances of the bad effects of this disposition of mind. Perhaps there is nothing more effectual in correcting such erroneous impressions than faithful reports of diseases, and of those circumstances attending them which may be supposed to modify their character. It is under the impression, that an accurate statement of the circumstances which took place during the prevalence of yellow fever in Baltimore, in the course of the last summer and autumn, will go far towards establishing some of these controverted points, in the minds of those who are sincerely desirous of discovering the truth, that I have undertaken to give the following account. I shall depend for my success chiefly on the fidelity of my narrative.

The ground on which Baltimore is placed is peculiarly favour-

able to an investigation of the origin of this disease; it will be proper therefore to give a concise topographical description of it, to enable those who have not visited this city justly to appreciate the inferences which may be drawn, from the facts which will be detailed.

Baltimore is situated about 10 miles from the head of the Chesapeake Bay, on the north side of a creek, or inlet of the river Patapsco. The land in this vicinity is alluvial, consisting of a coarse sand or gravel on a stratum of clay. Through the centre of the city runs a small stream called Jones's Falls, flowing in a direction from north to south, which empties into the Inlet or Basin as it is commonly called. The part east of Jones's Falls is called Old Town and Fell's Point. The north and western part of Old Town is dry, gravelly, and considerably elevated; but as you go in a south and easterly direction the land becomes low and flat, and seems to have been recently formed by the wash of the river. The extremity of the land in this direction projects for a considerable distance into the harbour, and is that part called Fell's Point. This portion of the city is not only low and flat, but was originally intersected by creeks, which are now artificially filled up; so that many places which are now occupied by dwelling houses quite remote from the water, have within the memory of many persons now living, been landing places for boats. Nearly all the cellars are occasionally wet. The whole margin of the city bordering on the water is indented with wharves and docks artificially constructed. The wharves are generally faced with timber, and then filled in with logs and the various offals of a large city, with a thin stratum of gravel on the surface. In some instances chips, and shavings of wood constitute the principal material. There are many reasons for believing that these substances have for some time been in a state of putrefactive decomposition. About two years since a person was employed to drive piles for the purpose of erecting a store on Wigman's wharf. In order to do this it was necessary to remove a quantity of logs, of which he found the wharf to be principally composed; in doing this there arose such an offensive odour, that it was almost impossible for the workmen to proceed, although

it was then in the midst of winter. The exciting cause of yellow fever, whatever it may be, was found during the summer of 1819, to exist in this spot, as will be seen hereafter, in its most concentrated form. Fell's Point is the place where all ships of considerable burthen lie, the depth of water not permitting vessels of this description to go farther. This is the principal place of residence for the sailors. It should be mentioned, that the water has insinuated itself into the body of many of the wharves, and washed out the looser parts, thus excavating some of them to considerable extent; in consequence of which large surfaces are alternately wet, and laid bare by the rise and fall of the tide. Some persons were inclined to attribute very considerable agency to this circumstance in producing the disease.

West of Jones's Falls the land is generally gravelly, dry, and elevated, excepting a strip bordering on the basin, and another, adjoining this stream, called the Meadow. This last, until within a few years was a mere marsh, frequently overflowed. It is now however rendered solid by being covered with a stratum of gravel several feet thick, and in many parts is quite thickly inhabited. The water in the basin is slightly brackish, and in a calm day the tide rises and falls about one foot, and when the wind blows fresh from the south or east, it rises much higher, and vice versa.

The country bordering on the Potomac and Patapsco rivers, is generally visited, during the warm season, with sudden and violent showers of rain, attended with thunder and lightning, every few days. The following remarks on the weather are taken from a meteorological journal, kept by Mr. Lewis Brantz, and published monthly in the *Federal Gazette*. From the known character of this gentleman, their accuracy may be depended on. The summer of 1819 was unusually dry and sultry. The heat was extremely oppressive not only from its intensity, but its duration. The prevailing winds, from the 1st of June to the last of September, were from the south and east. During the month of June there was no steady rain, and but five showers, three of which were very light. The mean temperature of Fahrenheit's thermometer during this month was 72° 2. 38. The mean temperature during

The month of July was 75° . The general range during the day was from 78° to 96° . There were but two days in the course of this month when it stood below 78° at 2 P. M. The weather during the month of August was still more oppressive; it was for the most part clear and hot, being seldom cloudy. There were but two thunder-gusts and four light showers during this month. The mean temperature of twenty-three successive days, from the 24th of July to the 15th of August inclusive, was $80^{\circ} 1.88$, and on the 14th between 2 and 3 o'clock P. M. the thermometer rose to the extraordinary height of 98° , at which it remained one hour. The mean temperature of the first nine days in September was 79° , of the nine days from the 10th to the 18th, $65\frac{1}{2}^{\circ}$. From the 1st to the 22d of this month there was but one slight shower, but this day began cloudy with a strong breeze from the north east, which increased to a heavy gale, attended with rain. The thermometer immediately fell to 60° , and never afterwards rose above 73° , but gradually declined after this time, the nights becoming quite cold. The weather remained cloudy and rainy for the remainder of the month.

The city remained healthy until quite late in July. Even after the yellow fever had made its appearance, the physicians in the more elevated districts remarked that the summer was more healthy than usual. Contrary to what would be anticipated by most persons, this disease did not begin in the city, but prevailed, to a very considerable extent, in the neighbourhood for several weeks before a single case occurred in town. It was first discovered on the margin of the harbour, for an extent of between two and three miles without the city. The spots where it was more particularly noticed, are known by the names of Canton, Harris's creek, Cedar Point, and the Sugar-House. In the course of the month of July one physician had no less than 30 cases on these estates. These persons were affected with all the intermediate degrees of fever from a slight intermittent to well marked yellow fever, attended with bilious stools, black vomit, and hæmorrhages. The greater number were of this latter description. These persons were generally farmers. It is worthy of notice that several of them who suffered most severely had not been in the city for a

month. As this occurred in a remote district, and the attending physician thought proper to be silent on the subject lest it should excite unnecessary alarm, this remained, comparatively speaking, unknown. The latter part of July the public attention was first roused by several cases which happened about the same time, exhibiting all the distinctive characters of bilious, remitting, or yellow fever, in its most malignant form. They could all be satisfactorily traced to Smith's dock, which is west of Jones's Falls, and one of the most central and busy spots in the whole city. The persons attacked were not exclusively of any particular profession. They were merchants, whose counting-rooms were on this wharf, crews of vessels lying in this dock, &c. Within a short time ten persons were seized, who were in the habit of frequenting this wharf, nearly all of whom died with black vomit, hæmorrhages, &c. From the number and violence of the cases, and from the high rank which several of these individuals held in society, great excitement was produced among the citizens. Several of the most intelligent and experienced members of the faculty likewise expressed serious apprehensions lest this should prove the harbinger of greater trouble. It was not alone because a few cases of yellow fever had been observed, as there is seldom a summer when some scattered, but well marked cases of this disease do not appear. It was the unusual heat and dryness of the season, and the early period at which they took place, which excited the unfavourable prognostics of these gentlemen. They now occurred in July, whereas they are seldom noticed until the latter part of August. Smith's dock is very long, but has never been noticed as being particularly filthy, nor is it ever left bare to any considerable extent by the tide. The wharf is constructed in the manner before mentioned. Some of the stores have wet cellars, others planked over, with an interval of from one to two feet between the plank and the mud. This was the state of several of the stores, the tenants of which died. We think this circumstance especially worthy of being noted, because Bowley's wharf, which was placed apparently under similar circumstances, and from which many persons died in the epidemic of 1800, was now healthy. This mortality, at that time, was

attributed to the bad state of the cellars, in consequence of which in most of the stores, they were filled up with fresh earth, and paved with bricks. There was but one case which occurred on this wharf during the summer of 1819, and that seems to countenance the belief that considerable importance should be attached to this circumstance. This patient was a clerk in a store, the cellar of which was in a bad state, and has since been filled up. It is right, however, to say that this gentleman had remained for several hours, during the middle of the day, delivering wheat, in one of the most filthy docks of the city, in an open boat. Immediately after he exposed himself to a stream of cool air in an open entry, with but little clothing. Soon after this he was seized with a violent chill, which was succeeded by a fever exhibiting symptoms of yellow fever, which shortly proved mortal. The situation of the adjoining (Price and Watson's) wharf, was supposed to have considerable agency in producing the disease in this spot. This wharf is faced with timber, and for a distance of 10 or 15 feet along its whole length it is filled with mud dug from the neighbouring dock. The remainder of the wharf, which is large, is filled with shavings, dirt collected from the streets, &c. &c. The margin of the wharf next to the water being filled with dock mud, is of course more dense, and it is likewise the highest part, so that the waste water runs off towards Smith's wharf. There is a twenty feet alley between these two wharves, on which the back doors and windows of the stores on Smith's wharf open. This alley was in a very bad state. Various nuisances were complained of about this spot, and the police took such means as were deemed necessary to prevent the further extension of the disease. The principal means employed for this purpose were, scattering lime over the alley and burning tobacco before the stores. The spot, however, was now nearly deserted, which was probably the principal reason that the progress of the malady was suddenly and completely suspended. There was evidently something in the structure of the wharf itself, and not the dock, to which we must impute the production of the exciting cause of this disease, because Spear's wharf, which is directly opposite, and which is only separated by the dock, was never invaded.

An interval now of nearly a fortnight elapsed, during which no new cases were publicly noticed. The fears of the citizens were in a great measure dispelled, and there seemed a well grounded hope that the progress of this dreadful malady was effectually stopped for the season. At the end of this time it again shewed itself in a spot remote indeed from the scene of its former ravages, but with a virulence in no degree mitigated. A public report made by the Health Office at this time (17th of August) assured the inhabitants that no serious or alarming increase of the fever had taken place, and still cherished the hope that it would not prevail to any very considerable extent. The total number of deaths for the past week was, however, rather alarming, and the prevailing diseases indicated that constitution of atmosphere from which every thing was to be feared. The total number of deaths for this week was 79, of which 18 were reported to die of cholera morbus, and the same number of bilious fever. It was likewise at this time formally announced by the Board that some well marked cases of the disease had been seen at the extremity of Fell's Point, in Wolfe street. This street runs parallel to the water, and is artificially constructed. That part where the disease first discovered itself is unpaved; in fact it seems to have been almost exclusively formed of shavings without even a stratum of earth upon them. The exciting cause of yellow fever would seem to have been evolved on this spot in its most concentrated form. This is shewn by the following circumstance: Soon after the epidemic had begun to spread in this part of the town, in consequence of a very disagreeable odour arising from this mass of putrefying shavings, it was complained of as a nuisance, when the police ordered it to be covered with fresh earth. Three labourers, all of whom lived in a healthy part of the town, were employed with their carts for this purpose. In the course of a few days all these men were seized with the prevailing disease, and they all died. A gentleman who attended two of these men assured me, that in his whole life he had never witnessed two more deplorable cases of disease. It confined its ravages for a few days to the wharves situated on the extremity of Fell's Point, and the adjoining streets, Pitt and Wolfe streets. But it remained stationary for a very short period. The fever

was first observed on this spot on the 17th of August, and by the 27th it had spread to such an extent, that every reflecting person became convinced that all hope of its being extinguished before the approach of cold weather was now utterly futile. There were several circumstances which conspired to excite the most gloomy anticipations about this time, (latter part of August and beginning of September.) The weather continued dry and sultry in the extreme. The situation of the spot which it had now invaded was most favourable to the extension of the disease; which, with the loose and improvident habits of the sailors, and persons connected with them, who form a considerable class of the population of this part of the city, led to an anticipation of the most deplorable consequences. It was remarked that the disease began about the wharves, and gradually spread itself into the interior. The crews of all the vessels lying at the extremity of the Point became more or less sickly. At Wirgman's wharf one physician attended the crews of three ships, nearly all of whom were down at the same time. The police now very properly ordered all the vessels to be hauled off into the stream. By the 9th of Sept. the disease was spreading rapidly over that part of the city which is properly called the Point, and seemed every day to become more ungovernable and fatal in its character. Every one who had it in their power to find a comfortable home elsewhere, now abandoned this part of the city; and every effort which humanity could dictate, and circumstances admit, was made by that portion of the citizens who were exempted from this dreadful malady, for the comfortable accomodation of the poor, in healthy situations. The weekly bill of mortality ending Monday, Sept. the 6th, reports the total number of deaths to be 91, of which 29 were malignant; yet at a very full meeting of the faculty three days afterwards, Sept. 9th, it was solemnly and unanimously declared by that body, that excepting the cases already mentioned at Smith's wharf, they do not believe a single case had originated west of Jones's Falls. They likewise declared without a dissenting voice, that four fifths of the city was at that time more healthy than it had been at the same season for several years.

From this period during the remainder of the month this horri-

ble pestilence stalked abroad in all the plenitude of its power, spreading death in its most loathsome and appalling form, in every direction. From its dreadful attacks there was no safety but in flight. No courage, no strength, no age could withstand this resistless, though invisible enemy. The most robust frame and vigorous health, equally with the more delicate form and feeble constitution of body sunk before its deadly approach. It is scarcely possible to conceive a more melancholy or affecting spectacle than this part of Baltimore exhibited. During the night it was completely illuminated by numerous bonfires, made in every street by the inhabitants, under an impression that this was an effectual mode of purifying the atmosphere. In the day the view was still more painful. Those places which were generally the most thronged and busy were now nearly depopulated. No noise of carriages was heard. Nothing was seen to interrupt this gloom, but perhaps a miserable negro lounging about for want of employment, a physician going his irksome round of duty, or the hearse with scarcely a follower. In that part of the town to which the disease extended last, and where it was rather less universal, one could not pass the street without noticing through the open windows persons standing about the bed of their sick and dying friends; while perhaps a little further, the attention would be attracted by objects exhibiting a strong and shocking contrast, persons in whom the most heedless self-abandonment and open debauchery were displayed. Almost every individual who remained in this part of the city was affected by the disease. From the 1st to the 30th of Sept. inclusive, besides other diseases, there were 640 cases of yellow fever reported to the Board of Health, of whom 242 died.* The following facts, which are selected from a great number possessing nearly the same common character, will shew to what an extent the atmosphere of this part of the city was at one time impregnated with the specific cause of yellow fever:—The ship *Ceres* sailed for Liverpool on the 25th of September. Among the passengers were a gentleman, his wife and daughter; the latter, a very interesting young lady about 20

* This is not, however, near the whole number of cases which took place, as the physicians only reported those which were the most strongly marked, lest they should excite unnecessary alarm. The number of deaths is accurate.

years of age, who had lived in a very healthy spot, in the westerly part of the city, rode to Wirgman's wharf for the purpose of embarking. The ship was already under way, and the boat waiting expressly for her. She only waited to get from the carriage to the boat, and was then rowed off. This was the only time she had been at the Point during the prevalence of the fever. The third day after she sailed she was seized with the usual symptoms of yellow fever, and died with black vomit, hemorrhage, &c. There were several others who died in this ship, but they had been frequently in the unhealthy part of the town. I shall only stop now to relate one more instance, which illustrates the same principle, while it delineates in a very forcible manner, one of the most remarkable and characteristic features of the disease. A woman employed as a housekeeper in Wilk street, which was at that time considered healthy, had made a short visit in the part of the city where the epidemic prevailed in its worst form. The third morning after she complained of a slight head-ach, and as at that time every complaint excited alarm, the gentleman with whom she lived insisted on sending for a physician, which she considered entirely unnecessary, and consented to with great reluctance. When the medical gentleman arrived he found her sweeping the house, and she had been during the whole morning engaged in making beds and attending to other domestic duties. He observed that the expression of the countenance was bad, and was still more shocked to find on examination that no pulsation could be distinguished in either wrist. He immediately called the gentleman aside, and assured him the woman was dying. This appearing incredible, another physician was called in. The women died in less than three hours afterwards!!

On the 22d instant, as has been already related, a very decided change took place in the weather. There was a long and violent storm from the north east, and the weather, particularly at night, became quite cool. The first effects of this change were very unfavourable. The number of new cases and deaths suddenly increased in a very alarming degree. This continued until the 29th, when the number of new cases, &c. again declined. About this time three new cases were announced at Smith's dock, but

the disease did not extend itself again in this quarter. It was not considered safe for the inhabitants to return to their dwellings until after the 25th of October, yet a favourable change may be dated from the first of the month, as far as regarded the number of new cases; but the severity of the disease was in no degree mitigated towards its termination, but on the contrary its virulence was increased.

The symptoms by which this disease was characterized varied very essentially in different individuals; nor could this be satisfactorily accounted for from the constitution of the patient, or the circumstances under which he was placed. Sometimes the first signs were pain in the head, back, and limbs, and an inflamed appearance of the eye. At others the disease was ushered in by a severe cold fit, which would continue for several hours; this would be succeeded by a violent fever, in which the head-ach and pains in the back and limbs would be excessive, the skin hot and burning, the countenance deeply suffused with blood, and the pulse hard and bounding. The fever would often continue without any intermission, and sometimes without any perceptible remission until the fifth or seventh day, when the pulse would sink, the surface become cold, deadly nausea would take place, followed by coffee-ground vomiting, hemorrhage and death. The yellowness of the skin often came on in this stage of the disease, and was sometimes of so deep a hue as to approach a black. In other instances nearly the reverse of this would take place. In the early stages of the disease there would be slight head-ach and pain in the back, attended with great prostration of muscular strength, preternatural coldness and clamminess of the surface, and sunken pulse. In some instances, these symptoms proceeded to such an extent that the powers of life were completely prostrated, and the patient died in a few hours. In one case a sailor was walking the deck without any complaint; he suddenly fell down. When the physician, who was immediately sent for, arrived, the senses remained, and the respiration continued, but the pulsation had ceased at the wrists, the face was hippocratic, and the man died almost immediately. If the patient did not die in this stage, which was often the case, on the 2d or 3d day reaction would take place, and the

state of the system would be completely reversed. The pulse would rise, the skin became hot, and repeated venesection became necessary. In some instances there would be neither, in the complaints of the patient, or other symptoms, any thing which would lead one to suppose that any alarming morbid affection existed, yet the patient would tell with astonishing precision the hour, and almost minute when he was siezed, and such cases frequently terminated fatally. In one instance the patient was apparently in a quiet refreshing sleep, the skin cool and the pulse not seeming to indicate danger. The patient being roused and questioned, answered rationally, that he had been seized at a certain hour two days before with head-ach and slight indisposition, but that he was now free from any complaint, excepting he was rather sleepy. Yet this man was passing his fæces and urine involuntarily, and died comatose within twelve hours. In other cases a train of symptoms so entirely opposite would ensue, that one could hardly recognize the most remote resemblance in a single feature of the disease; *e. g.* a man walked out to the hospital, a distance of more than a mile, and after he was left there by his friends, insisted that he had not a complaint. But he was delirious when he arrived, and soon became so troublesome that it was necessary to apply the strait waist-coat, which it was not found prudent to remove until within a short time before his death, which happened within 36 hours after he was admitted. The bowels were generally sluggish, but by no means insensible to the operation of cathartic medicine. There were no distinct remissions and exacerbations of fever. After the first attack there was generally an uninterrupted febrile state until a complete intermission took place. This was sometimes the case at the end of 24 hours, but at others it continued for four or five days. In many instances the sensations of the patient were in a very remarkable degree disordered. The skin would feel cold to a bystander, while the patient complained of a distressing sensation of heat, and vice versa. In almost every case the patient complained of heat and pain about the scrobiculus cordis, attended with such extreme sensibility, that the slightest pressure occasioned acute pain. This preternatural sensibility sometimes extended over the whole surface of the body, so that in one in-

stance the patient, a man, complained seriously of the pain caused by the pressure of the finger of the physician on the wrist, in feeling the pulse. In those parts which had undergone the process of vesication the soreness and pain was most exquisite. I saw a sailor on whom the common pains of the body would have made no impression, absolutely weep from the pain he endured in dressing his blister. Hemorrhages were most frequently from the mouth. The blood did not seem to be poured out from any spot, but to ooze from the whole internal surface of the mouth and gums. Bleeding sometimes took place from the nose, ears, stomach and bowels, and in one case, from the eyes. The blood was sometimes discharged in large quantities, particularly from the bowels, attended with tenesmus. Hemorrhage was always an alarming symptom, but not necessarily fatal. In one instance there was hemorrhage from the nose, ears, and stomach, preceded by black vomit, yet the patient, a boy, recovered. Black vomit took place generally on the 5th or 7th day, and was a most dangerous symptom. It was sometimes however the first symptom of the disease, as in the following case: A boy had fallen into the hold of a ship, by which both the thigh bones were fractured. The bones had united, and the boy was comparatively well. Soon after eating his breakfast, in apparent health, he was seized with deadly nausea, which terminated in black vomit; and he died on the fourth day. After the beginning of October, as has been already stated, the number of new cases and deaths essentially diminished; yet in those who were seized after this time, the disease was still more malignant and fatal than at its commencement. One gentleman assured me that of the 23 *last* cases which were under his care, 19 died in the following manner; after two or three days of smart fever, a complete intermission would take place, the patient would seem convalescent, his appetite would return, and every thing appear most flattering; when suddenly, and without any apparent reason, he would be seized with nausea, or rather a most distressing sensation of weight about the pit of the stomach, soon after which black vomit, or hemorrhage would ensue, which were the harbingers of death.

Enough has been said of the symptoms, I presume, to establish

beyond a doubt the identity of the disease, and as we are already acquainted with the situation of the spots where it prevailed, with the principal facts relating to the weather which preceded and accompanied it, and the whole progress of the disease, we are now in possession of all the circumstances on which we are to form our judgment respecting its nature and origin. In entering upon this inquiry I am sensible that I approach a delicate subject, and one that has been contested with a sharpness and personality which ought never to be allowed to enter within the pale of scientific inquiry. In my investigation of it I shall endeavour to be candid and dispassionate, and to draw only those inferences which the above facts and the known laws of the animal economy will fairly bear me out in. To resort to all the authorities which might be produced to illustrate the origin of yellow fever, is plainly beyond the scope of this paper. Indeed the necessity of such an attempt is entirely superseded by Dr. Bancroft's "*Essay on the Yellow Fever.*" I know of no book in the profession in which any point in pathology is more satisfactorily established. His authorities are so numerous, and unquestionable, his facts so apposite and happily arranged, and his arguments so manly, yet conclusive, that I can hardly conceive how any one can peruse the book without conviction. I have undertaken to give an account of the disease as it appeared in Baltimore in the summer and autumn of 1819, and I shall confine myself to this alone.

It has been, I believe, universally agreed among physicians, that the origin of yellow fever should be imputed to some one, or all of the following causes, viz. specific contagion, the effluvia arising from the decomposition of animal substances, and marsh miasmata. Let us now inquire if the phenomena which were observed during the progress of this disease, were such as to lead us fairly to infer, that it arose from any or all of these causes.

1st, Specific contagion. Ancient medical authors were not in the habit of marking with sufficient accuracy the distinction between the origin of contagions, epidemics, and endemic diseases. This is particularly evident in the writings of Sydenham, and the early English physicians. Even Dr. Cleghorn, in his account

of the diseases of Minorca, considers intermittents as contagious as small-pox.* This arose no doubt from the peculiar circumstances under which they were placed, particularly from the total neglect of police regulations. But the evils arising from these inaccuracies, have not yet ceased. In the care which has since been taken to prevent the introduction of foreign diseases, by quarantine laws, the same want of precision has been continued. All the violent diseases of warm climates have been considered contagious, and restrictions imposed on all intercourse with such places, to the manifest injury of commerce, and frequently to the ruin of individuals.

To prevent the inconvenience of using terms without a precise meaning, I will endeavour to define the epithets, *endemic*, *epidemic*, and *contagious*, when applied to disease. I am sensible that objections may be made to these definitions. In answer to such objections, I can only say, that I have looked in vain to find these terms distinguished from each other with more philosophical precision. At any rate they will serve to mark with sufficient accuracy my meaning, when I employ them. I have taken as my guide what seems to have been Mr. Adams's general meaning in his "Observations on morbid Poisons,"† though I consider his definitions very imperfect and unsatisfactory. By *epidemic* disease, then, I understand the effects produced by a certain unknown state or constitution of the atmosphere, in consequence of which, many persons residing in certain districts, or countries, become affected about the same time, by a disease having a common character. Thus, the influenza is sometimes epidemic, affecting about the same time many countries. Dysentery and pleurisy, having certain peculiar characters, are sometimes known to prevail as epidemics; certain fevers are sometimes epidemic, as the spotted fever, which has been so fatal in some parts of this country, puerperal fever, &c. It has been remarked, that during an epidemic, other diseases are apt to approximate, or affect the same character.

An *endemic* disease may be defined the morbid effects produced

* Vide p. 121

† Chap. 2d. p. 6 & 7

by certain exhalations, or effluvia, or miasmata, arising from the peculiar *properties* of some soils when applied, under certain circumstances, to the body, and which are confined to certain districts, which may be defined with considerable precision. The most striking examples of endemic diseases, are intermittent and remittent fevers. As these diseases, particularly the first, are only known to prevail in low marshy situations, or where the soil has considerable vegetable matter and argil combined with it, or is placed on a stratum of this earth, while persons residing in the immediate neighbourhood, on dry, gravelly and elevated situations, remain healthy; we must suppose, that these noxious effects are derived from the earth. The goitre of Switzerland, the leprosy of Syria, and the Barbadoes swelled leg, may perhaps be considered endemic, although they are generally imputed to other causes.

Contagion may be defined a product, or secretion of a diseased body, which, when applied to a healthy body, is capable of producing a disease similar to itself. Small-pox, measles, pertussis, and syphilis, are familiar examples of this. From the above definitions it will be seen that a contagious disease may be epidemic: that is to say, that in certain states of the atmosphere, these diseases may be propagated with more facility, than in others. But a contagious disease cannot be endemic; for although there be no absolute absurdity in supposing, a priori, that a disease produced by certain exhalations or miasmata, should become contagious, yet, after it has once acquired that quality, it may be communicated indefinitely. There can be no doubt that the readiness with which a contagious disease may be communicated, is very essentially modified by the degree of concentration of the contagion, the susceptibility of the individual, and the peculiar constitution of the atmosphere; yet it is contrary to all our knowledge of pathology to suppose, that a disease can at one time be contagious, and at another, absolutely destitute of that quality. It will be readily admitted that a person labouring under a contagious disease, in a narrow alley, and in a small, ill ventilated apartment, would communicate it with much more certainty than in a spacious room, in an open, airy situation. But it seems highly incredible that a

disease can at one time be so contagious, that it is capable of being transported hundreds, or thousands of miles, concealed in a package of goods, a trunk of clothes, or even about the person of an individual in perfect health, while at others, it shall prevail for months, in the midst of a populous city, and be confined to a narrow circle, and not be communicated in a single instance out of that circle, though no care be taken to restrict it. In investigating the contagious quality of disease, we are apt to be misled by finding that families, and persons in the habit of frequent intercourse, are seized with the disease, and we are often inclined to impute its origin to this intercourse rather than to their having been exposed to the same exciting cause; the same impure atmosphere. On this subject, it has very properly been remarked by Dr. Haygarth, that* "observation or experiment can determine with much greater certainty *what does not*, than *what does give infection.*" But let us proceed in our proposed inquiry.

If this disease arose from a specific contagion, then it was most probably of foreign origin, and we should expect to find it first in those spots where there is the most frequent intercourse with foreign countries. But from the history which has already been given, it will be seen that it was first discovered in the country, at least two miles from the city. Nevertheless, as this is on the margin of the harbour, and in sight of which all ships entering must pass, it is possible that some intercourse might have taken place without its being generally known. But, from the known laws of contagious diseases, we should suppose after it had been once excited, that it would extend itself from this spot, as from a center, and that the new cases might, by a little care, be traced to some intercourse with this spot. But, excepting in the low marshy situations, and clayey soils, where intermittent and remittent fevers annually prevail, the disease did not extend in this neighbourhood. It next manifested itself at Smith's wharf, a distance of between two and three miles off, and between which little or no intercourse existed. Again, several of the persons who were supposed to have received their disease at Smith's wharf, resided in elevated situations in the westerly part of the town, where they

* Vide Bancroft, p. 94.

remained during their whole sickness; and the intercourse between these persons and their families and friends was at no time interrupted. Yet none of these families became affected, nor has any one pretended that this was the case. On the contrary, the disease, instead of radiating from these different points, entirely ceased after the death or recovery of these individuals. The spot where it again shewed itself was at least a mile in a right line from where these persons resided, where it spread itself, as has already been remarked, with dreadful rapidity; but none of the inhabitants of this part of the city have ever supposed that they derived it from any other part. Fell's Point may with propriety be considered the Port of Baltimore; and although the operations of commerce were weakened, yet they were never entirely suspended. Vessels were constantly arriving and discharging their cargoes at this part of the town, from which the goods were conveyed into the healthy districts without any inconvenience. There were likewise numerous instances of persons labouring under the worst forms of the disease being removed into the healthy parts of the town, without it being pretended that they communicated the disease in a solitary instance. The Hospital is situated about one mile from the city, on a very elevated delightful spot, and, in the extent and arrangement of the building, is inferior to no institution of the kind in the United States. It generally contains from 130 to 150 patients, lunatics, and sick of the United States navy. During the whole of the disease there were from 30 to 50 patients, in every stage of yellow fever from its mildest to its most malignant form. The wards where these persons were placed communicated by entries with the rest of the house, and there was an uninterrupted intercourse kept up. There were nurses constantly in attendance employed in removing the excretions, and yet there was not a single circumstance which could lead one to suppose that the disease was contagious. Such was the conviction of its non-contagious nature, not only in the minds of the faculty, but the other citizens, that the Hospital was thronged, particularly on Sundays, by people, some of whom came to visit their

friends, and many who came merely to witness the effects of a disease which had excited so much horror. When to these facts is superadded the solemn and unanimous declaration of the faculty on the 9th of Sept. that they had not seen a single circumstance which could lead them to suppose it was contagious, I am irresistibly led to the conclusion that the disease neither originated from, nor was afterwards propagated by contagion.

Such is the disgust and horror we naturally feel on witnessing the putrefaction of animal substances, particularly human bodies, that it is not surprising that this should have been early assigned as one of the causes of pestilential diseases. A more careful examination of this subject by modern physicians, however, does not confirm this opinion.* I have never heard that any one attributed the disease of which we are now treating to this cause;

* The following quotation from Dr. Bancroft, will go very far to shew that the effluvia arising from the putrefaction of animal bodies, is not capable of producing yellow fever, or other pestilential disease. "The church yard of the Saints Innocens, at Paris, situated in one of the most populous quarters of the city, had been the depository of so many bodies, that although its area enclosed nearly two acres, yet the soil had been raised, by them, eight or ten feet higher than the level of the adjoining street, and, upon the most moderate calculation, considerably more than six hundred thousand bodies had been buried in it during the last six centuries; previous to which date it was a very ancient burial ground. In less than thirty years the last gravedigger had deposited more than ninety thousand corpses. The earth itself had become so supersaturated with human putrefaction, as to have no longer any action, or decomposing influence, upon the bodies buried therein. The public mind became at last so much alarmed by the offensive smells, that it was determined to forbid all future burials, and to remove so much of the superstratum as would reduce it to a level with the street. This work was undertaken in 1786, under the superintendence of M. Thouret, a physician of eminence in Paris, and in two years he accomplished the removal of that superstratum. The exhumation, says this gentleman, (*Journal de Physique*, for 1791,) were principally executed during the winter, but a considerable part of them was also carried on during the greatest heats of summer. They were begun with every possible care, and with every known precaution; but they were afterwards continued, almost for the whole period, without employing any precaution whatever. Yet no danger manifested itself in the whole course of our labours,—no accident occurred to disturb the public tranquillity. It does not appear from the fullest inquiry, that any febrile disorder was ever produced by this immense mass of corruption."

nevertheless it will be proper to say something on this point. The only considerable sources, that I know of, from which these effects could be expected, are the grave-yards and slaughter-houses. The first are all without the city, and it so happens that nearly all of the last are very remote from where the fever prevailed, and I have not been able to find an instance where the disease was supposed to have been taken in this way. These houses are generally placed in the precincts, but for the most part in situations which are quite populous. If the stench arising from them was alone sufficient to produce yellow fever, then we should suppose that the neighbouring inhabitants could seldom be free from it from April to December. A physician, who had a very extensive practice among these people for many years assured me, that he had always considered them particularly healthy.

The only supposed cause of yellow fever which it remains for us to examine, is the exhalation commonly called marsh miasmata. The deleterious effects of this agent upon the human constitution are so palpable, that although it is entirely destitute of any sensible qualities, it has been mentioned as a cause of pestilential disease from the earliest records of medicine. Though the opinion, that contagion and animal putrefaction are among the number of the exciting causes of yellow fever, has been strongly contested, yet I believe all have admitted, that marsh miasmata is one of these causes. There is the strongest evidence of the existence, and certain properties of marsh effluvia, though they have never been obtained in a separate form, or submitted to chemical analysis. The only known test of their existence is, their effects on the human body. They necessarily require for their evolution the three following agents, viz. decaying vegetables, or a soil consisting of vegetable remains, humidity, and a temperature above 45° of Fahrenheit's thermometer. The precise proportion of these substances, and the degree and duration of heat most favourable to this process, is not known; but it is plain that a temperature above 45° for a considerable time is necessary, and that the evolution is increased, by increasing the temperature, until you arrive at 100°. An excess or deficiency

of humidity tends to retard the process. In a living animal or plant the particles of which it is composed are not combined according to their chemical affinity, but are placed under the influence of that unknown principle, life. The laws of chemical affinity, so far as regards them, are suspended, and they are controlled by what has been aptly called* "vital affinity." But when dissolution has taken place, the laws of chemical affinity again resume their full force, which is shewn in the process of putrefaction. The form becomes changed, new combinations are formed, different gases are extricated; and this process continues until these bodies return to the elements of which they are composed, constituting, what has been called, a *caput mortuum*; and in this form they become the proper pabulum for other plants. As the circumstances above mentioned, favourable to the production of marsh miasmata, are precisely those most favourable to putrefaction, there seems to be good reason to believe that this exhalation is in fact one of the gaseous products of this process.

The effects arising from this exhalation or gas are found in low, marshy situations, excepting in what are called peat bogs,† and are generally proportioned to the temperature of the climate, the season of the year, and the susceptibility of the individual exposed to it. In the spring and early part of the summer, when perhaps it is extricated in less abundance, it causes intermittents; during the latter part of summer, and through the autumn, when perhaps it exists in a more concentrated form, the common autumnal, or the malignant bilious remitting fever, and usually ends in intermittents;‡ these effects being modified by the temperature and humidity of the season, &c. &c. Persons accustomed to a cold dry atmosphere are most susceptible of its influence, especially by sleeping on the ground during the night.§ There seem to be good reasons for believing that this exhalation is specifically heavier than atmospheric air, and that it does not

* Vide J. Jackson's Inaugural Thesis on the Brunonian System.

† Vide Bancroft, Appendix, No. VI.

‡ Pringle on Diseases of the Army

§ Bancroft

rise to any considerable height.* It seems likewise to be soluble in water, at least it seems to lose its deleterious effects in passing over its surface, or through it.† It does not affect other animals in any thing like the degree that it does man. Indeed I know of but one authority (Dr. Rush) for supposing that it affects them at all. I cannot find any one who observed this to be the case, during the prevalence of the disease concerning which we are now speaking. I inquired of Mr. Haslam, a very intelligent veterinary surgeon, who is consulted in most of the diseases of domestic animals which occur in the city, whether he had observed any thing of the kind; but he assured me that he had remarked that the season was unusually healthy.

Carbonic acid gas, and other noxious factitious airs, particularly those which sometimes escape from animal bodies in an early stage of putrefaction, manifest their injurious effects by their sudden and direct action on the organs of respiration, producing syncope or asphyxia, &c. But marsh miasmata differ essentially in their effects from all these: they are destitute of all taste and odour. It often happens that while the unsuspecting individual is gay and happy, this invidious poison insinuates itself into the inmost recesses of the body, and lays dormant for weeks without producing a disagreeable sensation. "No visible signs," says Chateauvieux, a French traveller in Italy, "marks the existence, or the approach of this pestiferous air. The sky is as pure, the verdure as fresh, the air as tranquil as in the most healthy region. The aspect of the elements is such as should inspire the most perfect confidence; and it is impossible to express the horror which one experiences on discovering that all this is deception; that he is in the midst of dangers of which no indication exists; and that with the soft air that he is breathing he may be inhaling a poison destructive to life." But this noxious exhalation is not entirely confined to low marshy grounds; it is sometimes generated in spots which are considerably elevated. Those soils which contain a considerable

* Dr. Hunter on the Diseases of the Army. Pringle, Blane, &c.

† Dr. Blane's report respecting the Walcheren Fever, *Medico Transactions*, &c.

portion of clay, or rest on a stratum of this earth, which is nearly impenetrable to fluids, are sometimes found to produce this exhalation, even when they are considerably elevated. So frequently is argil found to abound in those situations where these miasmata are produced, that Linnæus endeavoured to prove in his Inaugural Thesis, for the degree of M. D. that intermittent fevers were always caused by this earth. This effluvia is known in Italy by the name of *mal. fria*. It chiefly prevails in a large tract known by the name *Maremma*, "which spreads along the shores of the Mediterranean Sea, from Leghorn to Terracina, and reaches inland as far as the first chain of Appenines. Its length is 192 geographical miles, and its breadth in the *Agro Romano*, where it is greatest, between 30 and 40." The Pontine Marshes constitute a part of this tract, but a greater part of it cannot be considered by any means marshy. The surface is waving and in some places quite high, but there are several circumstances which render the soil peculiarly favourable to the retention of humidity. The basis of the soil, we are informed, "consists principally of pure argil," or "of substances thrown out from volcanoes in a detached state, and afterwards consolidated into stone."* On this basis is a rich mould, in which all the vegetable productions of this delightful country grow in the greatest luxuriance. As these regions have become almost depopulated in consequence of the noxious state of the atmosphere, this extensive district is almost exclusively devoted to pasturage.

This, during the existence of the Roman empire, was one of the most populous parts of Italy, where stood the villas of the wealthy and luxurious inhabitants of the neighbouring city. As it was then in a high state of cultivation, it was not considered unhealthy, excepting about a few spots, viz. *Andea*, *Antium*, and *Terracina*. But as the political importance of the country has declined, the number, industry, and enterprise of the inhabitants have declined with it. The large quantities of decaying vegetable matter which has been allowed to accumulate on a moist soil in a warm climate, has probably caused this pestilential state

* See a very interesting paper in the *Edin. Review*, vol. 23.

of the atmosphere, which is constantly extending the sphere of its influence. "It has already passed the gates of Rome, and lodged itself within the walls of the 'eternal city.' The sanctity of the papal residence has not exempted the Quirinal from this pestilence, any more than the departed majesty of the Cæars has protected the Palatine from its influence. Yet the Quirinal is 207 feet above the level of the Tiber, and the Palatine 181."

Such is the origin, and such the most essential properties of that exhalation commonly known among physicians by the name of marsh miasmata. However they may differ on other subjects, yet, I believe, they universally acknowledge, that this exhalation is, at least sometimes, an exciting cause of yellow fever. As specific contagion, and animal putrefaction, seem entirely inadequate to account for the prevalence of this disease in Baltimore during the summer and autumn of 1819; let us next inquire if the known properties of this agent will more satisfactorily explain it.

The soil about that spot where the disease first appeared, viz. Canton, Cedar Point, and Harris's creek, is precisely that most favourable to the production of marsh miasmata. These places have always been considered sickly, and found subject to those diseases which have been described as the result of this exhalation, viz. intermittent, remittent and yellow fevers. I have been informed by the physician, who has attended the greater number of families in this neighbourhood, that every summer the two first prevail, and that a season seldom passes when he does not meet with some cases of the last.

If vegetable substances in a state of putrefaction, humidity, and heat, are ever capable of causing yellow fever, we can scarcely imagine circumstances more favourable to its production than what existed at Smith's, and Price and Watson's wharfs, which are essentially the same, being only divided by an imaginary line. Such a mass of materials as I have described this wharf to be composed of, lying entirely open to the south and east, during such a season, we should suppose could not fail of exhaling this noxious effluvium.

At Fell's Point, particularly in that district where the disease

raged with the greatest fury, all these causes existed to a still greater extent. Not only warehouses were erected on new made land filled up with these noxious materials, but whole streets of dwelling houses. This spot is annually subject to intermittent and remittent fevers. The very moment I am writing this (last of Feb. 1820), the weather having been uncommonly warm for a few days, intermittents begin to prevail. This cause then (marsh miasmata) seems entirely sufficient to explain all the phenomena which have been described, and to assign any more would be "to suppose more causes of things, than are necessary to explain their appearances." The following conclusions, therefore, seem not only legitimate, but unavoidable.

1st, That the disease which prevailed in Baltimore, during the summer and autumn of 1819, was that known and designated by physicians, by the name of yellow fever.

2d, That it was, strictly speaking, endemic, that it neither originated in, nor was afterwards propagated by, any specific contagion, but was of domestic origin.

When I began this paper, it was my intention to have entered pretty fully, into a consideration of the treatment; because, from the testimony of those who had the best opportunity of examining the subject, and my own observation, I have been induced to believe, that what are considered the received and established doctrines on the subject, are far from being infallible. But it has insensibly been drawn out to such an extent, that this must at least be deferred for the present.

It is proper for me to say, that I am under obligations to several physicians, for many of the facts which have been stated. I would acknowledge particular obligation in this respect, to Drs. Clendenin and Murphy, who reside in the part of the town where the disease prevailed.

THE PLAGUE OF ATHENS.

SECTION I.

IN the third year of the 87th Olympiad, answering to the 430th preceding the christian æra, a plague broke out in the city of Athens, which, for its severity, duration, and the mortality it occasioned, exceeded all which, before that time, had been known to the Greeks: for it inflicted the most dreadful pains on all who experienced it; spared neither age nor sex; destroyed near five thousand of the flower of the Athenian armies, with an immense multitude of the poor; and did not disappear till after it had exercised the most unexampled cruelties, for a period of little less than five years, and reduced the powerful republic of Athens to the very verge of ruin and despair.

Attica, of which Athens is the capital, is a small state, situated between the 37 and 39th degrees of north latitude, and comprehending a territory, the extent of which, though variously estimated, is on no computation very considerable.* Its figure is a triangle, having its two sides washed by the sea, and its base united to the continent. The face of the country is exceedingly broken and diversified by high, rugged, and irregular mountains, contrasted with deep, winding, and pent up vallies.

The streams by which it is divided are remarkably rapid; swelled in the spring, by the dissolution of the snows which crown the mountains; but shrunk up, by the excessive heat of the summer: resembling, in this respect, the Lehi and other rivers of Pennsylvania and the southern states.

The lower extremity of the Attic peninsula was, and continues, remarkably barren; being chiefly composed either of bare rocks or desert sands. Towards Athens it assumed a more lively appearance; where the assiduous hand of cultivation intermingled the olive, the vine, and a variety of plants, with the firs and other evergreens that naturally ornamented the summits of the hills. But of other woods they were nearly destitute; so that, at the period of which we are speaking, fuel was both scanty and dear.

* The Abbé Barthélémi makes it 66 square leagues. Voy. du J. Anachar. chap. vi. M. de Pauw computes it to equal 250 square miles. Philos. Dissert. on the Greeks, vol. i. p. 3. Translation. Edit. London.

The soil of Attica, light and poor, produced no other grain than an indifferent barley; and the country was unfitted, no less on this account, than from its small extent, for pasturage. Eubœa, and the neighbouring parts of Greece, furnished the Athenians with their meats; while their ships supplied them with wheat from distant countries, but chiefly from the borders of the Euxine. The constant demand for grain at Athens, gave rise to a multiplicity of municipal regulations, frequently evaded by a spirit of speculation not unworthy, either for ingenuity or eagerness, of the present times; while the imperfect supply of better meats, conferred a value on many kinds of flesh, birds, and insects, at which modern delicacy would sicken.* Even at the present time, if we may credit the assertion of a late traveller,† no other flesh but that of goats, is to be found in the Athenian markets. This defect of animals proper for food, created in the people of Attica an habitual preference of vegetables; and, conspiring with the meagerness of the soil, produced a state of cultivation unequalled in any country now known, if, perhaps, in deference to the testimony of Kæmpfer and Thunberg, we except Japan. The olive and the vine which flourish in a thin soil, were naturalized; earth was carried from the vales and deposited upon the hills; walls were constructed to support it there, and prevent its being washed down by the rains; and by contrivances not different in effect from our hot-beds and green-houses, the markets of Athens were regularly and daily supplied with fresh vegetables, even during the severity of winter. Nor was the industry of the people restrained to the securing of a steady sufficiency of the necessaries of life. Luxury and taste, which found little to gratify them in the meal, presided over the desert; not esculent plants alone, but the myrtle, the rose, and other flowering shrubs, were assiduously reared; and a winter entertainment in Athens, regaled the smell with fragrance, the eye with blossoms, and the taste with fruits of delicious flavor.

But, though industry and art could remedy the defects of soil, nature had been equally parsimonious, in another respect, where they could not prevail against her. Athens and Attica were poorly supplied with water. Their streams were brackish, impregnated with minerals or with salt; and the people were obliged to have recourse to pits and cisterns, to preserve

* De Pauw, sect. xi. chap. 3.

† Travels through Switzerland, Italy, and part of Greece, &c. in 1787, 1788, and 1789, by Thomas Watkins.—London, Cadell, 8vo. 2 vols.

that water with which they were scantily supplied by infrequent rains. For, beside that the air of Attica was, in general, exceedingly *dry*, plentiful rains were only known to happen when the *hellepontias*, or north-east wind, prevailed.* The climate of Attica bears a striking resemblance to that of many of the United States. Its latitude being nearly the same, variations could only depend on local circumstances. From the broken face of the country, we should naturally expect to find the seasons tempestuous; and from its nearness to the sea, the weather changeable. Both of these were true; but the snowy heights of the numerous surrounding hills, and the long chain of mountains which reached quite across and almost buried the adjoining kingdom of Thrace, preserved a more steady and severe cold in winter than on the sea-coast; and a more uniform and suffocative heat in summer. The north-west winds, which came from the icy summits in the cold season, were piercing; and the sultry and confined vales, when agitated by any breeze in the warmer months, seemed to have borrowed their gales from the deserts of Africa.—So excessive was the cold of the neighbouring states of Bœotia and Phocis, though both in a latitude lower than Norfolk in Virginia, that the Bacchantes nearly perished in a snow-storm, in the former; and an army, from the confines of Germany, were unable to sustain the rigors of a winter campaign in the latter.†

* De Pauw, chap. 10. vol. i. part 1.—It may be proper once for all, to inform the reader, that the chapters of De Pauw, which have been particularly consulted, are the 2d, 3d, 8th, 10th of section i. and the 6th of section ii.—Other parts of the work are occasionally referred to.

† De Pauw, chap. 10. section i.

The following passages, from the “Works and Days” of Hesiod, a poet who resided at Ascra, a village in the neighbouring country of Bœotia, and but a few leagues from Athens, serve to confirm this account of the climate of Attica.

“The month, all hurtful to the lab’ring kine,
 Ist part devoted to the god of wine,
 Demands your utmost care;* when raging forth,
 O’er the wide seas, the tyrant of the north,
 Bellowing through Thrace, tears up the lofty woods,
 Hardens the earth, and binds the rapid floods.
 The mountain oak, high tow’ring to the skies,
 Torn from his root, across the valley lies;
 Wide spreading ruin threatens all the shore,
 Loud groans the earth, and all the forests roar:
 And now the beast amazed, from him that reigns
 Lord of the woods, to those which graze the plains,

* This answers to the month Nivose of the new French calendar.

Sometimes a sudden and severe frost destroyed even the roots of the vines and the trees.*

The winter fat in very early in Attica. The cold winds began to prevail about the autumnal equinox; when the north-west, in particular, seemed to descend, fraught with chills, perpendicularly, on the city of Athens. Its greatest height was about the first of February—nor has the climate undergone any change since the time of Pericles, in those particulars, as appears from the publications of Riedesel and Wheeler†—the last of whom was prevented from visiting the top of

Shiv'ring the piercing blast, affrighted, flies,
And guards his tender tail betwixt his thighs.
Now nought avails the roughness of the bear,
The ox's hide, nor the goat's length of hair,
Rich in their fleece, alone the well-cloth'd fold,
Dread not the blust'ring wind, nor fear the cold.
The man who could erect support his age,
Now bends reluctant to the north-wind's rage."

" Now does the boneless polypus, in rage,
Feed on his sect, his hunger to assuage;
The sun no more, bright shining in the day,
Directs him in the flood to find his prey;
O'er swarthy nations, while he fiercely gleams,
Greece feels the power but of his fainter beams.
Now all things have a different face below;
The beasts now shiver at the falling snow;
Thro' woods, and thro' the shady vale, they run
To various haunts, the pinching cold to shun:
Some to the thicket of the forest flock,
And some, for shelter, seek the hollow rock."

Cook's Hesiod, verse 175.

" When with their domes the slow-paced snails retreat,
Beneath some foliage, from the burning heat," &c.

Cooke—verse 256.

" The season when the dog resumes his reign,
Weakens the nerves of man, and burns the brain.
'Then in the shade avoid the mid-day sun," &c.

Verse 270.

The description of winter would well apply to the northern boundary of the United States; and the direction in the last line of the last quotation is well adapted to the climate of Georgia and the Carolinas.

* Theophrastus—DE CAUSIS PLANTARUM, lib. v. quoted by M. DE PAUW.—Instances of this kind are frequent in our own country. I have known such a frost, near the city of New-York, in June; and a snow-storm happened in the May of 1760, after the apple-trees were in blossom; and another in May, 1774.

† Observ. sur le Levant, par M. Reidesel. Wheeler's Travels in Greece, vol. ii. both cited by De Pauw, but neither to be found in the New-York and Philadelphia libraries.—The accounts of these gentlemen do not seem

Mount Hymettus, by the snows in February, and found his woollen clothes scarce sufficient to protect him against the cold of the vallies. The narrow and rapid streams of Attica and Peloponnesus were seldom fastened by ice, notwithstanding this rigorous winter; but the broader rivers of Thrace, a country situated in a much warmer latitude than New-York, were frozen over like the Connecticut and the Hudson.

It resulted, necessarily, from this variety of seasons, that a great difference existed between the summer and winter dress of the people. In the cold season, it was difficult to clothe too warm; in the warm season, to go too thinly clad. The Athenians, in summer, rambled about, and performed their exercises, nearly naked, in their extensive porticoes and public groves. In the winter, they wrapped themselves up in woollens, and shrunk into their close, confined, and heated rooms.* Even their nice sense of the graceful in attire, yielded to the imperious mandates of the season; and the actors of their theatres, as well as the spectators, covered themselves with a fleecy mantle. The women, alone, with that pertinacious regard to external appearance, which has been little weakened by time, were remarkable for a light dress, ill-suited to protect them from the terrors of the winter. But their recluse and sedentary lives did not so much expose them to its influence, as the active habits

perfectly to accord with that of Mr. Watkins, unless we are to suppose the winter in which he was at Athens unusually moderate. He was there in December, 1788—when he says, “the season which is particularly severe at Constantinople, is here open.” Perhaps the greatest cold happens after December, at Athens, as appears to have been the case at New-York, for some years past.

* Hesiod, in the Poem before cited, gives the following directions for a winter dress.

“A winter garment now demands your care,
To guard the body from the inclement air;
Soft be the inward vest, the outward strong,
And large to wrap you warm, down reaching long:
Thin lay your warp, when you the loom prepare,
And close to weave the woof no labour spare.
The rigour of the day a man defies,
Thus cloth'd, nor fees his hairs like bristles rise.
Next for your feet the well-hair'd shoes provide,
Hairy within, of a sound ox's hide.
A kid's soft skin over your shoulders throw,
Unhurt to keep you from the rain or snow;
And for your head a well-made covering get,
To keep your ears safe from the cold and wet.”

Works and Days, v. 215.

of the men, who monopolized, at the same time, business and diversions.*

To causes already enumerated it may doubtless be attributed that the principal part of the food of the Athenians consisted of vegetables.† Even at the tables of the rich, their scanty and minute dishes of meats, which formed the first course, or the meal, were soon removed, to make way for fruits of every flavour, the rich olive, the delicious grape, and the honey of Hymettus.‡ To the poor this slender supply of flesh was denied, as beyond their means to procure; and, except at their public feasts, we may presume, they rarely tasted it. On these occasions, indeed, they indulged in gluttony and drunkenness without restraint.§ Nor were the private entertainments of the Athenians always more becomingly conducted.¶ Women, as well as men, at certain feasts gave way to the most disgusting intemperance and disorder; as if resolved, at such times, to avenge themselves, by the extent and violence of their debaucheries, for that general state of dependant insignificance to which they were subjected.§ But such opportunities occurred, neither for them nor for the people at large, so often as to have any permanent influence on their health. Their vegetable diet was mostly persisted in. Roots and fruits abounded in the winter; honey they always had; and the dried grape was then substituted for the fresh. Thus a steady succession of garden vegetables, of fruits, and even of flowers, became essential to the Athenians; and a failure in quantity, or a defect in quality, tended to excite commotions and insurrections in Athens, as certainly as like circumstances in respect to bread in Paris. But frugal as they were in time of peace, in war they were obliged to submit to still greater fru-

* To this reclus life of the Athenian women, Hesiod alludes in the following lines—"Works and Days, v. 195.

" ————— the tender maid,
Free and secure, of storms nor winds afraid,
Lives, nurtur'd chaste beneath her mother's eye,
Unhurt, unfully'd, by the winter's sky."

In addition to De Pauw, consult Voy. du J. Anachar. chap. xx. and Potter's Grecian Antiquities, B. iv. chap. 13.

† Potter's Antiquities, B. iv. chap. 18.

‡ Watkins, in 1778, enumerates "rice, dried figs, olives, honey of Hymettus, and rich milk"—among the delicacies which Athens afforded, to compensate him for goat's flesh, few roots, and bad bread."

§ See Voy. du J. Anachar. chap. 25. De Pauw, sect. iii. chap. 2. Potter, B. iv. chap. 20.

gality, and a less agreeable fare. The subsistence of the Athenian armies consisted of salted meat, particularly fish, dried fruits, cheese, olives, onions, and an inferior species of barley.* Nor were the poorer citizens of Attica better provided. Pent up either in their boroughs, or in the capital, they were restricted, at once, from their accustomed supplies, which the rich only could draw from their extensive gardens: for the Athenians held a feeble face on the land side; and their territory was frequently left, undefended, to the ravages of a merciless invader. Nothing could exhibit a more striking and immediate change in the ordinary food of the people, than the preparations for war. Yet, how great soever were their sufferings, and though commotions succeeded commotions, their vanity and ambition, their numerous spectacles at home, and their splendid victories abroad, deceived them of their sorrows, and elevated them above their misfortunes.

Domestic slavery existed, in full force, throughout Greece. In Attica the generous temper of the people mitigated its severity; and, if we except the wretches who were doomed to labour in the mines, the slaves were treated with mildness and indulgence. This might be the more necessary, as they greatly exceeded their masters in number, and were employed on all public works, and sometimes in the armies. The number of slaves in Attica is estimated at 400,000; and it is not probable that the citizens of the Republic, together with strangers resident in the Athenian territory, exceeded 100,000, including women and children. The permanent houses of Athens and its suburbs are computed by Xenophon, to amount to 10,000; and when we consider that most of them were mere cabins, we shall not think the residents of that city more numerous than 50,000: which is the estimation of De Pauw. The remainder were inhabitants of the neighbouring boroughs; employed in the mines; and scattered over the face of the country. Fifty thousand people, therefore, may be supposed to have steadily resided in Athens, in time of peace. And it is the more material to obtain correct ideas on this point, as very important deductions will be found, irresistibly, to flow from its establishment.

The extremity of the Attic peninsula seems to have been little susceptible of tillage. Its chief population consisted of the slaves employed in the silver mines of Laurium, and the

* Potter's Antiquities, B. iii. chap. 4. De Pauw, sect. ii. chap. 3.
VOL. I. C

persons concerned in their superintendence. Northward, and to the north of Athens, the whole country was covered with orchards and vineyards. It was in the country that the wealthy and luxurious Athenians most delighted to dwell: for while the private buildings of the city exhibited an appearance of meanness and wretchedness below that of our most miserable frontier towns, every decoration that architecture, sculpture, painting, gardening, and planting would bestow, was expended on the villas of the rich. As in European countries, their plantations oftentimes extended several miles in circumference, while the poor possessed not a foot of earth. Yet the superior wretchedness of the city poor attached the country people to their habitations, where they were universally more comfortably settled, and led more tranquil, healthy, and independent lives.

Such was the general condition of Attica, and the Athenian people: but the city of Athens, the seat of the severe calamities which were brought upon the nation by the Plague, demands a more particular consideration.

The city of Athens, situated on the left side of the peninsula of Attica, and built almost on the border of the Saronic gulf, lies in north latitude 38 deg. 5 m. or nearly that of Norfolk in Virginia. This place, afterwards so celebrated, at first consisted only of a few miserable cabins, erected on the top of a rock, in the midst of an extensive plain. As the number of inhabitants increased, the surrounding plain became settled: the original city was devoted to the gods, and was called Acropolis, or the Citadel; while the rest of the settlement was denominated the Lower City. The Citadel was inclosed in a proper wall; and a wall, common to that and to the lower city, surrounded the whole. The population and commerce of Athens extending, the city extended with them; and by means of the Long Walls, which reached to the sea, was made to comprehend three harbours—the Piræus, Munychia, and Phalerum.

The *Citadel*, if perhaps we except the ministers and servants of the temples, contained no inhabitants. Nor does it appear to have been visited by the plague.

The *Lower City*, like most of the cities of Modern Europe, and many of our own, was settled without regard to any plan. Each person regulated the position of his house by his own particular notions of convenience; and thus, while in some quarters the buildings were huddled together, in others

large places were left unlocated.—The circumference of the city, or the space comprehended within the wall, was about seven miles. This extent of territory, though much more considerable than was necessary for the accommodation of the proper inhabitants, afforded them little advantage; for scarcely a third was built upon. A large portion of it, the Marshes, was unfit for use. Some parts were rocky; others covered with groves, and devoted to particular exercises; and many places, the best adapted for building, were left desolate. For, when any citizen was convicted of treason, the laws directed his house to be razed, his grounds to be laid waste; and forbade the erection of other buildings, and the prosecution of further improvements, on the places. This sentence, it is true, was sometimes reversed by particular rulers; but, at the time now treated of, many such vacant spots were left. Of these, the *Pelasgic* was one, and probably the most extensive; and its settlement was specially prohibited by the Oracle.—But a further reason for leaving so much ground unoccupied, was for the accommodation of the country people, who, in time of war, were obliged to take refuge within the walls of the capital. Here they erected, without any order, their temporary and wretched huts; leaving their fields to be desolated by their furious adversaries.

Marshes and stagnant water were, by no means, confined to the city. Much of the road to the harbours was marshy; and the Ilyssus and Cephissus wandered through the extensive marsh of Phalerus, which lay directly south of and near the lower wall, leading to the harbour of that name.

The northern and eastern environs of Athens partook of the same misfortune. The Academy, where the celebrated school of Plato was kept, suffered severely in consequence. That philosopher himself, many years after the plague, and when much labour and money had been expended to render the situation healthy, was made sick by the dampness of the air, and obliged to remove to the higher country of Colonna. Nor was the Academy more salubrious from the vicinity of an extensive burying-ground on one side, numbers of tile-kilns on the other, and the rows of thick planted trees (a common fault in Athens), which excluded the sun, and prevented a free circulation of the air. Within the city this was not the only obstacle to due ventilation. The numerous streets of the inhabited quarters were narrow, irregular, unpaved, and worse built than any of the towns in the United States. The pub,

lic buildings alone excelled those of other countries for elegant magnificence; rendered more striking by contrast with the uniform meanness of those by which they were surrounded: for it was the policy of the government to discountenance private expense in building; and the Areopagus sat the example of this rigid and baneful simplicity, by holding their own assemblies in a house whose cieling was of clay. The wealthy fled into the country, where they rioted in luxury at their superb villas; but the regular citizens were obliged to submit; while the poor were consoled by constant employment in constructing and beautifying the national edifices, whose splendor, equally shared by rich and poor, gratified their vanity and elevated their pride. Their own dwellings, indeed, were little better than the wigwams of our savages; few of the rich had houses of more than a single story; and where upper apartments were added, the second story projected into the street, and was ascended to by stairs on the outside.*

The number of houses in Athens has been already stated at 10,000, exclusive of temples, other public edifices, and manufactories. These last were numerous and extensive. A whole square was devoted to the cabinet-makers; another to sculptors; and several to the workers in metals.

The following facts may serve to convey some idea of the ordinary cleanliness of Athens.

The people, it has been noticed already, ate but sparingly of meat. Most of their cattle were offered up as sacrifices to the gods. Sometimes the victims were portioned out among the assistants; sometimes a feast succeeded, when the limbs, half consumed, were wantonly thrown about the streets; sometimes the blood and entrails were burnt, and thrown into a ditch; but oftener they were left undisturbed, or unburied, at the places of sacrifice; and this was so common, that some parts of the town must have borne a near resemblance to a slaughter-house.—To these circumstances, De Pauw, with great probability,† ascribes it that Athens was perpetually in-

* In many European towns, and even in London so late as the year 1784, and probably later, the same fact has been observed. In the narrow streets where this manner of building prevails, the tenants of the lower stairs never feel the sun, or see him shine. Those who live in the upper rooms can shake hands across the street, and from their front windows.—Is it surprising that these places are rarely free from low fevers?

† The present town of Athens is as badly built as ever, according to Mr. Watkins; and its population reduced to about 5000 people; others say 10,000.

† Compare this with Mr. Bruce's account of the city of Gondar, in Abyssinia.

feasted with wolves.* The rewards offered for the destruction of these animals were insufficient while the cause remained; nor are they extinct, if we may believe a modern traveller,† at this day, in the vicinity of Athens.

From the south-western gate of Athens, two walls took their rise; the southernmost of which extended, about $3\frac{1}{2}$ miles, to Phalerum; the northernmost, about 4 miles, to the Piræus. Between these two ports, but nearest Phalerum, lies Munychia; which, by means of a third wall, near seven miles in length, conformable to the windings of the margin or beach, was included with them. Thus these three walls, the two former of which were called the Long Walls, formed a triangle, whose irregular base was on the sea, and its narrow apex at the wall of the city. The extent of Athens, if determined by the walls which inclosed as well the town as the ports, is estimated at 22 Attic, or about 17 of our miles.

At the time of the plague, the *Piræus* was the principal port; though all three were in constant use. Here the vessels and ships of war were built, victualled, refitted, and stationed. Here all commodities were shipped and received from abroad. These, and the borough of *Piræus*, which was situated between that port and Munychia, were the receptacles of their seamen, of residentiary and trading strangers, of manufacturers and artisans, of all employed in traffic and the labours of the ports, and of the many wretches which commerce and navigation never fail to create. The harbour and town of *Piræus* were very populous. Three docks distinguished the former; and an extensive portico, composed by the union of five inferior porticoes; two forums, one near the sea, and another towards the city; a spacious mart, the resort of all the trading nations; and a prodigious arsenal; ornamented the latter. From hence to Athens was about four miles, over a marshy road; the width of which, between the walls, was near $\frac{1}{2}$ a mile at *Piræus*, and about 50 rods at Athens. So

finia. The hyænas enter Gondar, in the night, to prey on the remains of slaughtered animals, which lie in the streets.

* "She (Greece) breeds the ravenous wolf, the bear, the boar,
Pernicious monsters!" Fawkes' Theocritus, idyl. xxv. l. 201.

"Any one who brings in an he-wolf, shall have five drachms, and for a she-wolf, one." Law of Solon. Potter's Grecian Antiquities, vol. i. page 167.—In the time of Xenophon, the hunters alone were allowed to pass the line of defence, in time of war, in order to destroy bears and wolves, which would otherwise desolate the country. De Pauw, sect. ii. chap. 6.

† Spon. Voyage de la Græce.

small and confined was this ancient emporium of commerce; and when we recollect the inferior size of vessels at the time of which we are speaking; when we bear in mind the assertions of late travellers, who maintain that this port would not afford anchorage for fifty modern ships;* when, too, we remember the immense crowd of people who actually resorted there in times of peace, and the navies fitted out by the Athenians in the Peloponnesian war, we shall have some idea of the confusion, mixture, and miserable accommodations which the residents of that quarter submitted to, in its ordinary state of population.

The Athenians, in general, if we except the regular inhabitants of the town, were remarkably attached to a country life. Neither the splendid ceremonies, nor the enchanting spectacles of the city, possessed sufficient allurements to entice them from places where they acted without restraint, and indulged in exercises equally conducive to health and pleasure. The rich were more luxurious, and the poor better provided for. This tranquillity and enjoyment had been interrupted by the Persian invasion; but, after the liberties of Greece had been asserted and secured, the Athenians re-settled their territory; beautified it with new groves and villas; covered it with their wooden huts; and spread an ample and luxuriant vegetation over all its fields. Such was their situation at the commencement of the Peloponnesian war.

Differences had subsisted between the Spartan and Athenian republics, for a long time. Negotiation had been ineffectually resorted to, for their accommodation, till at length, Athens, by the persuasive and irresistible eloquence of Pericles, was led to a declaration of hostilities. The Spartans and their confederates were powerful by land; the Athenians by sea. The former trusted to their armies; the latter, to their fleets. It was their usual practice to leave their frontiers unguarded, and, at the alarm of war, retreat within the city and the walled

* "Description of the gulph of Venice and the coasts of the Morea," by M. Bellin—referred to by De Pauw, sect. ii. chap. 6.

Watkins, vol. ii. p. 279. says, that Phalerum is "so shallow, that a large barge could not float in it"—and Munychia is in the same condition. If another remark of this writer be accurate, vol. ii. p. 293. "that the soil of Athens is from 12 to 18 feet higher than it originally was," it will appear that some considerable change has taken place in the capacity of these ports. That an alteration has been effected is evident by the circumstance of the channel both of the Ilyssus and Cephysus being dry. See p. 304 and 310 of the same work.

boroughs. A similar conduct was recommended to them, by Pericles, on the breaking out of the present war, in the year 431 preceding the christian era. But, though they followed his advice, from a conviction of its propriety, yet never was a removal attended with circumstances more melancholy, and regrets more poignant. The people had just become comfortably settled, and the country beginning to respire, after the defeat of the Persian invaders. These pleasant accommodations, and these rural scenes, passionately beloved, they were forced to relinquish, unprovided with shelter in the city, from which, in times of the greatest prosperity, they hastened to depart, and where they were now to seek their sad and reluctant refuge. They were obliged, with their own hands, to pull down their new-built houses, and to abandon the fields, tilled by themselves, to a merciless and desolating enemy. Nay more, to forsake "their temples, which, from long antiquity, it had "been their forefathers' and their own religious care to frequent;" "to quite alter their scene of life, and each abandon as it were his native home. When they were come "into the city, some few had houses ready for their reception, "or sheltered themselves with their relations. The greater "part were forced to settle in the less frequented parts of the "city, in all the buildings sacred to the Gods and Heroes, except those in the citadel, the Eleusinian, and any other from "whence they were excluded by religious awe."* So urgent was the necessity, that, contrary to the express prohibition, as it was supposed, of the Pythian oracle, they seized upon the interdicted ground of the Pelasgic, and erected there their miserable huts. Set up wherever space was found, in the utmost disorder, and prest together, they experienced no free circulation of the air; while their diminutive size provoked the sallies of a sarcastic poet,† who compares them to butts or casks. When the Pelasgic was fully occupied, there was not yet sufficient room for the new-comers. "The city," says Thucydides, "was not able to receive so large a conflux of "people." "Many were forced to lodge in the turrets of "the walls, or wherever they could find a vacant corner." "Afterwards the Long Walls, and a great part of the Piræus.‡ "were portioned out to them, for little dwellings." "Some,"

* Thucydides, B. ii. Smith's Translation.

† Aristophanes.

‡ i. e. The streets, market-places, porticoes, &c. of this borough, were partitioned off, into little rooms, for the families from the country.

he remarks in another place, "had no houses, but dwelled in booths, where there was scarce room to breathe." "At the same time, they (the Athenians) were busied in the military preparations, and fitting out (at this very Piræus) a fleet of one hundred ships, to infest Peloponnesus." This was in the spring of the year 431; the flocks and labouring cattle had been previously sent over into Eubœa, and the neighbouring islands; and the harvest was left standing. By this removal, the population of Athens was augmented from 50 to more than 400,000; all supplies of fresh meats were at an end; the city was in a state of blockade, dependent for its vegetable nutriment on the importations and hoards of the preceding year, and the scanty product of the fields in its immediate vicinity.

Such was the situation of Attica and the capital, when, "in the height of summer, and when the harvest was ripe," the Spartans and their confederates broke into the Athenian territory, and laid it waste even to the walls of Acharna;* which they closely besieged. But the southern extremity, and most barren part of the Attic peninsula, protected by the fleet, escaped this year. Thus were the principal supplies of Athens, for the ensuing year, totally destroyed. Nor were the people shut up within its walls insensible to this calamity. A scene like this they had never witnessed before; and its horrors were magnified by their apprehensions of famine; by their grief on quitting their fields and dwellings; by their resentment against the actors in it; and all were heightened by the earnest entreaties of the Acharnians, to sally out, and repulse the enemy. Commotions and insurrections followed; the courage and conduct of Pericles were loudly arraigned; and it required the utmost efforts of his address and eloquence, and the full weight of his popularity, to restrain the disaffected.

When the Peloponnesians had withdrawn from Attica, the Athenians, as if it were to leave no possibility of supplies, for themselves or others, on the north of Athens, marched into the adjacent country of Megara, and subjected it to similar devastations.

Those who remember the desolation effected under the orders of the celebrated Marshall Turenne, or the more recent horrors of the Vendée, will have some suitable notion of the

* Acharna was about six of our miles from Athens; and contained, at this time, 3000 fighting men. Beside this, there were several smaller towns, also garrisoned, and in the same condition as Athens and Acharna, in respect to supplies.

condition in which Attica was left by the Peloponnesians: Neither fire nor sword was left unemployed in this terrible war against the harmless earth; vines and fruit-trees were wholly destroyed; the government of Sparta encouraged its rapacious soldiery; and "nothing was left to the vanquished but their temples and their tombs."*

The Athenians past the first winter of the war, pent up within their city, discontented and unhappy; in part supported by their naval strength, and cherishing the vain hope that their enemies would not renew their depredations; or, at least, not to the same degree.

Early in the ensuing spring (of 430, A. C.) the Peloponnesians made a fresh incursion. Whatever had escaped before, or had since grown up, on the north and west of Athens, was now utterly laid waste. They were busied in this work when the Plague, about the last of April, or beginning of May, suddenly appeared in the Piræus; and, afterwards, during the same summer, extended over the whole city.—The Peloponnesians, having completed their ravages in all the Attic territory above Athens, fell upon the southern parts of the peninsula, and rendered them equally desolate. Thus, to use the words of Thucydides, "they made the whole country one continued devastation."—If the Athenians who had removed into the city were before afflicted, all their sorrows were now redoubled. Nor could the talents of Pericles, which prevailed upon them to continue, and which directed the efforts of the war, re-animate their spirits amid such unexpected calamities. "The poor citizens who had but little, could not bear, with patience, the loss of that little. The rich and the great regretted the loss of their estates, with their country-seats, and splendid furniture."†

Meantime the plague continued to extend; and prevailed, with great mortality, the whole of the years 430 and 429. However, in the last of these years the country respired a little. The enemy made no ravages, and Athens had opportunity to gather in her vegetable harvest. This was followed by an abatement of the plague, during the following year, 428.—In the summer of that year, and "when the corn was full-grown," the Peloponnesians entered Attica: but

* Scholiast of Demosthenes, on the "Discourse against Timocrates," quoted by De Pauw, sect. i. chap. 8.

† Thucydides, B. ii.

the Athenian horse and light troops kept them off; and, by means of repeated skirmishes, defended and protected "the parts adjacent to the city." This allowed the people to gather a second, but more scanty harvest; and they past the succeeding summer, with a further exemption from the plague; which, however, had at no time deserted them.* But, in the autumn of 427, and about the equinox,* it broke out afresh, and with augmented violence. As a precursor to this severe calamity, their enemies, the preceding summer, had renewed their depredations, with such success as to be necessitated to retire from the Athenian territory, for want of forage for their horses.—The year ensuing (426) the plague raged with unexampled fury and mortality. But this was the limit of its power. Causes, hereafter to be investigated, operated to deliver them from its dominion; and the incursions of their hostile neighbours now ceasing, health was restored to Athens.

The relation apparently subsisting between the plague of Athens and the state of the citizens, in respect of vegetable supplies, is too curious and important to be lightly passed over; and will be best exhibited by the following table, for the introduction of which it seems unnecessary to offer an apology.

Attica ravaged, and the vegetable supplies cut off,	
in the summer of	431, A. C.
The plague breaks out in the spring of	430
The ravages renewed and extended in the summer of	430
The plague at its height in	429
No devastations in	429
No plague, or but very little, in	428
Depredations in the latter part of the summer, but not so extensive as formerly, in	428
The plague holds off all summer, but recurs in autumn	427
The ravages more extensive than ever, in	427
The plague worse than ever, in	426

* The New-York fever of 1795, though it commenced the last of July that year, was nearly extinct on the fourth of September; but revived about the 15th, and increased in mortality till the middle of October. The greatest mortality of the fever of Philadelphia, in 1793, was in October; nor did the winter entirely banish all symptoms of the disease.

Tempestuous season, &c. obliges the Peloponnesians to retire, without committing any depredations, in

426

No recurrence of the plague either in

425

or after.—The Peloponnesians were in Attica but fifteen days this year (425), in which time they had opportunity to inflict very little injury on the country.

SECTION II.

THE preceding narration of facts has prepared the way for the discussion of a question in relation to the disease under consideration, which has always given rise to great variety of opinion, and been deemed of much importance, in the history of Epidemics—Whether the Plague was imported, or of local origin? As no certain evidence is left to us by the ancients, on this interesting point, we are necessitated to have recourse to the exercise of our own judgments, on a comparison of all the circumstances connected with this memorable calamity. It, indeed, appears, from Thucydides, that a report prevailed in his time, that the Plague originated in Africa, and was imported into Athens. But, from the manner in which this report is noticed by the historian, it may be inferred that he thought it entitled to very little credit; for he declares that the disorder fell suddenly on the people of the Piræus, so that it “occasioned a report that the Peloponnesians had caused poison to be thrown into the wells;” and he calls upon “every one, physician, or not, freely to declare his own sentiments about it, and to assign any *credible* account of its rise, &c.”* Great stress, it is true, is not to be laid on an argument like this; it is sufficient, however, to counteract the absurd dogmatism of later writers, who have not hesitated to represent the disease as propagated from imported contagion.—Medicine, at this period, had scarcely disencumbered herself of her swaddling clothes; and though no person will venture to question the sagacity of the Athenians, and the peculiar talents of Thucydides for observation, neither his countrymen, nor himself, can fairly be supposed to have examined this subject with philosophical precision. The method least liable to rational objection will be, carefully to enumerate *all the circumstances*

* Smith's Thucydides, B. ii,

connected with this memorable calamity.—To this enumeration, therefore, we shall immediately attend.

1. The condition of the city of Athens, in its ordinary state, was favourable to the generation and continuance of febrile diseases, in their season.

2. The people of the town, as well as of the country, were accustomed to a vegetable diet, and to much and free exercise.

3. The population of Athens, in common, was small in proportion to its extent.

4. Its population, during the first years of the Peloponnesian war, was increased beyond all capacity of the place for accommodation.

5. The country people, especially, underwent a remarkable change of air, lodging, diet, and mode of life.

6. Exercise was, in great measure, denied to all; few were provided, in any considerable degree, with fresh provisions; all, probably, had salt meats; all were disheartened; most of them were without employment, and idle.

7. The plague first appeared in that part of the city where there was the least cleanliness; the least ventilation; the worst accommodations of all sorts; and where the people were the poorest of the country poor.

8. In this part of the town it broke out *all at once*, or “fell suddenly,” to use the words of Thucydides; and thence, *gradually* extended to the better settled, and more healthy parts of the city. It was longest in reaching or appearing in the neighbouring country towns of Attica, which were, like Athens, in a state of siege or blockade.

9. It commenced in the sultry season of the year; after people had passed a year in this new and wretched situation, oppressed in mind, and harassed in body; and as soon as the summer sun came to operate on the collected filth of winter.

10. Those who came into the town, from the country, suffered most; and the poor more than the rich; and this in proportion as they were badly lodged and provided for.

11. Like other epidemical diseases, the plague of Athens converted every other complaint into itself, or banished it, during its own continuance.

12. It was fatal to domestic animals, as well as to men; and birds, and all wild animals, shunned the city during its prevalence.

13. It affected the Athenians only, when carried by their

troops into other countries; and was never propagated into any other state than theirs—not even the contiguous towns of Peloponnesus and Bœotia—notwithstanding the numerous encounters between the hostile nations.

In the summer of the year 430, A. C. when the plague first arose, the Athenians were fitting out a fleet, to commit depredations on the coast of Peloponnesus. This armament landed at Epidaurus, and expected to take the city; but the plague raged among the troops, destroyed numbers of them, and they were obliged to return without having effected their purpose. Plutarch* says that they communicated the disease to all who had intercourse with them. By this he may mean to all their allies.—The total silence of Thucydides, a contemporary writer, on this point, would be a sufficient reason for believing this statement to be inaccurate, even if he had not, elsewhere,† expressly mentioned that the plague was never propagated to Peloponnesus.

The same summer the Athenians sent a reinforcement to their army which was carrying on the siege of Potidea, a town of Chalcidica, lying on the gulf of Therma. The reinforcement amounted to 4000 men; and they found the troops before Potidea healthy. This did not long continue. They fell sick themselves; communicated the pestilence to the others; and returned, after a stay of forty days, having, in that time, lost 1050 of their number. Yet the old troops continued the siege, and afterwards took the place; and the Potideans were never affected by the disease.‡

14. The condition of the skin, mouth, &c. (hereafter to be more particularly noticed,) bore a striking resemblance to that state of the same parts which occurs in scurvy; a disease universally attributed to confinement, bad air, and want of fresh provisions.§

* Article—Pericles.

† Smith's Thucydides, B. ii.

‡ Neither the Philadelphia fever of 1793, nor the New-York fever of 1795, were communicated to other places. The citizens of both places were, in numerous instances, seized with the fever, after leaving those cities; but their country attendants escaped.—The Philadelphia fever appears to have been contagious—i. e. communicable by one to another, from contact, &c. The New-York fever, on the contrary, was rarely, or never, so communicated.

§ It is worthy an attentive investigation, whether the peculiar ulcers, buboes, carbuncles, &c. of the plague, which render it worse than our yellow fever, do not depend on salted meats, other defects in diet, and such circumstances, generally, as are known to occasion scurvy.

15. There was always a decline of the plague, when the harvest of the preceding year was spared; and the plague returned, when the harvest of the preceding year was destroyed.

The second great prevalence of the plague did not commence till after the middle of September; when the ordinary causes of fever are most accumulated; when the scanty supplies of the preceding year may be supposed to have been consumed; and when those for the year succeeding, which should then have been gathered in, were cut off.*

16. The plague did not cease till after the incursions of the Peloponnesians were given over. But the consideration of the causes of its disappearance will be deferred for the conclusion of this section.

17. The Athenians, themselves, accused Pericles of having caused the plague, by bringing so vast a number of people into the city, who were ill-provided with lodgings, and lived in idleness, infecting the air, and poisoning one another.†

18. A further indication of the sentiments of the Athenians, concerning the source of their pestilence, may be perceived in the following fact. After the war, they constituted five distinct places, in separate Cantons, asylums for the country people, in times of invasion; nor have we any certain account of any future plague infesting their city.‡

A due consideration of the facts just enumerated can hardly fail to impress the mind of the reader with entire conviction of the domestic origin of the Athenian plague. Nor should we want medical authority to countenance us in the belief, if opinions could be admitted as confirmation. Yet, to pass by those of many living physicians of deserved reputation, who might be supposed improperly biased in their decision on this question, and not to insist on the pointed declaration of the illustrious *Haller*, who considers the plague of Athens as an ordi-

* How far may HABIT be considered as influential in this case? The plague originally broke out in the first of summer: could the people have become so habituated to their situation as to require the accumulation of all the ordinary, as well as the extraordinary causes of fever, to the renewal of the disease?

† See Plutarch—Life of Pericles, near the end.

‡ London has never been afflicted by any extensive pestilence since the town was rebuilt, the streets widened, and sinks and water-closets provided. The low fevers of that city are mostly confined to the poor, and to such as reside in the old, narrow and dirty streets; which have derived little benefit from modern improvements.

nary contagious fever, of local origin;* it may not be impertinent to quote the words of the sagacious and learned De Pauw, whose opinion may be the more relied upon, as that elegant writer, not being a physician, was unlikely to be influenced by the prejudices so liberally ascribed to professional writers. After asserting the domestic origin of the plague, and noticing the sentiments of Haller on this point, he says, "To seek, in Ethiopia, the origin of a disorder, so evidently arising from multitudes of men heaped and pressed together, would be absurd; especially as its influence did not extend beyond the walls of Athens, and was totally unknown in every other part of Greece. Similar effects would be now produced in any town where the particles of the atmosphere are entirely changed, by being charged with different noxious effluvia, as frequently happens in fleets, or among armies encamped in too close order."†

Thus the sentiments of men, not to be suspected of being any way warped by recent occurrences and discussions, are found to countenance the inferences ventured to be deduced in this Essay, from an examination of facts relative to the Attic pestilence. But it is time to proceed to the consideration of the disease itself.

In the following account of the symptoms of the plague of Athens, the authority of Thucydides is principally relied on. He was a cotemporary writer, resided in Athens at the time, and was himself afflicted with the disorder. His relation is rather that of an historian than of a physician; for he purposely avoids noticing particular symptoms, though he gives us reason to believe that a great variety was observable in individual cases. Beside Thucydides, we have no original author on this epidemic. The *cases* left us by Hippocrates, if, indeed, written by him, must relate to some later plague, and in some other place. All the documents to establish the reality of his presence at Athens, at the time we are treating of, are manifestly supposititious.‡ Nor is more credit due to

* Biblioth. Med. Pract.

† De Pauw, sect. ii. chap. 6.

‡ On this subject consult Mead's works, p. 210. Edit. Edinb. 8vo. Athenian Letters, Letter 316. by Dr. Heberden, who, in a professed account of Hippocrates, is totally silent as to his fabled journey to Athens, and his equally fabulous exploits there, during this plague; but particularly "Histoire de la Médecine, &c. par Daniel Le Clerc," printed at Amsterdam, 1702, 4to. chap. xxxi. p. 232, where the authenticity of the papers referred to is exa-

the description of Lucretius,* though arrayed in all the transcendent charms of eloquence and poetry. He has done little more than versify Thucydides; interweaving with the words of the historian some scattered passages from the Prognostics and Epidemics of Hippocrates, and superadding the wonderful embellishments of an ardent and vigorous imagination.

In the arrangement of symptoms, the order of Thucydides is not adhered to; both because, his account being historical, the method is not perfectly adapted to convey a connected exhibition of the disease, and because the variation now made will better enable the reader to compare the Athenian pestilence with those of Philadelphia in 1793, and New-York in 1795; the arrangement being nearly that of Dr. Rush, in his account of the former, and corresponding with the method pursued in the letters to Dr. Buel, on the latter.†

THE fore part of the year 430, A. C. was remarkably healthy; but whatever diseases existed at the time of the appearance of the Plague, were either banished by it, or assumed its livery. This disease broke forth suddenly. Its attack was, generally, sudden; commencing without any previous illness, or apparent cause. It began with violent head-ach, inflammation and fiery redness of the eyes; soon succeeded by inflammation of the throat, difficult respiration, and offensive breath. A sneezing and hoarseness followed, with cough

mined at great length, and completely disproved. Indeed, the total silence of Thucydides in respect to Hippocrates' being at Athens, and his express declaration that "all human art was totally unavailing," seems sufficient proof that the papers called *Τὰ ἐξωτικά* by Foësius, in his edition of Hippocrates, are a fabrication by later hands.

The reader who may be curious to examine what Hippocrates has left concerning the plague, is referred to his treatise, intituled *τῶν ἐπιδημιῶν*, or EPIDEMICS, Book iii. sect. 3. p. 166. Edit. Foes. he will there find a history of what Hippocrates considers a pestilential constitution, or condition of the atmosphere, generating plague; followed by some account of the symptoms, &c. of the disease, and a statement, more or less minute, of sixteen cases. These cases differ, in many striking particulars, as to the symptoms, duration, and event of the disease; of which the historian appears to have been no more than a looker-on. They are without date, either of place or year; and how useful soever they might be to a writer who should treat, generally, on the plague, deserve no consideration in relation to the subject of the present essay.

* DE RERUM NATURA, Lib. vi. p. 254. Edit. Barbou, (1754.) ver. 19.

† See Mr. Webster's Collection, &c.

and other pulmonary affections. But the progress and nature of the disorder will be more clearly comprehended, from the following disposition of the particular symptoms.

I. Thucydides has left us no observations to lead us to any minute information of the peculiar state of the *Blood-vessels*. Lucretius says there was hemorrhagy from the gums, fauces, and even the tongue; from all which a dark-coloured blood oozed.

II. Thucydides and Lucretius agree in describing the *breast* as severely affected. The former tells us that "the malady soon descended to the breast, with a violent cough."*

All had hoarseness, extremely difficult respiration, and offensive breath. "A great part," says Thucydides, "of the infected were subject to such violent *hiccups*, without any discharge, as brought upon them a strong convulsion, to some of short, to others of a very long continuance."†

The *brain* was remarkably diseased during the whole of the sickness. Violent head-ach, and inflamed eyes, were among the first symptoms by which the disease manifested itself. A morbid wakefulness "never abated for a moment," which cannot be attributed solely to the extreme restlessness of the sick.‡

* Lucretius says the *HEART* was affected. But the word *COR*, in this place, is intended to signify the *STOMACH*; and in this he coincides with Thucydides. See Annotations annexed to Creech's Version of Lucretius, note on line III4.

† From the words "without any discharge," one might suppose that the common hiccup, noticed in fevers, is not all that was meant by Thucydides. I observed in the New-York fever of 1795, a mingled hiccuping and belching; and there sometimes occurs in dyspeptic cases a kind of belching with violent spasmodic motions of the stomach, not readily distinguished, by the inexperienced observer, from hiccups. The hiccup is commonly accounted one of the most unfavourable symptoms, and does not often appear, in our fevers, till the close of the disease. But the hiccup of the Athenians seems to have been of early occurrence, and extreme violence; nor is it noted as particularly fatal; but of nearly universal experience. Convulsions are by no means peculiar to the Athenian plague. Violent cramp of the extremities, with pains of the bowels, like those of *COLICA PICTONUM*, often occur in Yellow Fever; and I have, myself, observed a true, but irregular *TETANUS*, in that complaint, not entirely disappearing for several days.

‡ When they passed over the first 7, 8, or 9 days, which may be considered as the first stage of the disorder, Lucretius informs us that it took another turn, and sometimes appeared in the form of a pain of the head, with a profuse discharge of corrupted blood from the nostrils. Of this, however, Thucydides says nothing. Were it admitted as fact, it would seem that, in these cases, the brain was principally affected; and would therein offer another resemblance to our fevers.

In a girl who had the yellow fever, the summer of 1796, the greatest vio-

III. The whole *alimentary canal* was greatly deranged. The throat and tongue were inflamed;* and vomiting of bilious matter was general, "with excessive torture." When the sick out-lived the usual period of seven or nine days, the disease fell upon the bowels, which became "violently ulcerated;" and the ulcerations "were accompanied with an incessant flux, by which many, reduced to an excessive weakness, were carried off."

IV. The *secretions* and *excretions*, in the plague, were much increased; particularly from the intestinal canal. But, notwithstanding what Thucydides observes of "discharges of bile" in vomiting, there seems no more reason for supposing any remarkable secretion of that fluid, in this disease, than in our fevers; in which it is generally thought to be augmented: perhaps without sufficient reason. On the nature of the alvine discharges, Thucydides furnishes us with no remarks. The experience of most physicians will supply this defect, without recurring to the authority of Lucretius, who describes them as black, foetid, and corrupt.—Nor may we place more confidence in his account of thin, salt, sparing, and saffron-coloured *sputa*, minutely copied from the Prognostics of Hippocrates.

The *sneezing*, noticed among the first symptoms of the disease, was probably accompanied with the usual increased discharge from the nostrils.

V. The hiccup, convulsions and morbid wakefulness, already mentioned, indicate the diseased condition of the *Nervous System*.

Thucydides enlarges, with consummate eloquence, on the terrible influence which this calamity exercised over the minds of his countrymen. As no treatment afforded any certain relief, and as the disease spared neither age nor sex, few dared to

lence of the disease was expended on the brain; which continued much disordered for 12 or 14 days. The disappearance of the coma was attended by a dark discharge from her ears, one eye, and especially both nostrils. The discharge continued some days, gradually becoming light-coloured.

* The translator of Thucydides renders the words on which this remark is founded, viz. *Καὶ τὰ ἐντὸς, ἥτε φάεργε, καὶ ἡ γλῶσσα ἐνθὺς αἱμαλώδη ἦν.*—"Within, the throat and tongue began instantly to be red as blood."—But the annotator on Creech's version of Lucretius translates the passage more correctly—"And inwardly their throats and tongues grew presently bloody." This difference is not material here; but it illustrates, confirms, and shews the origin of the remark of Lucretius, noticed under the first division in this arrangement of symptoms.

yield assistance to their friends; and when some generous spirits flew to the relief of others, it was in a fit of despair, with the expectation, or determination, of sharing their fate.—A dubious and destructive war agitated the minds of all. Pent up within their walls, destitute of employment, they saw their friends perishing around them, and a merciless enemy laying waste their territory, and threatening them with famine.—The melancholy emigrants from the country beheld their possessions desolated, their houses devoted to the flames, and themselves menaced with utter extirpation; while neither the consolations of affection, the prospect of speedy succour, nor the comforts of food and cloathing, of lodging and attendance, were extended to their relief.—A superstitious horror seized on every heart, and weighed down every spirit, when they remembered the interdictions of the Oracle. They shuddered when they saw the pestilence depopulate the *Pelasgic*, on which they had impiously erected their miserable dwellings; and imagined, in the dreadful calamity that oppressed and overwhelmed them, the effects of the vengeance of the offended Gods. But, “whatever supplications were offered in the temples, whatever recourse to oracles and religious rites, all were unavailing.” At length, with the hope of favourable change, regard to decency was lost. An utter depravity of morals extended itself with the disorder, aided it in all its ravages, and exceeded it in the measure of its desolation.

In the sick, “dejection of mind constantly attended, from the first attack;” and after some continuance of the disease, and when its operation was well understood, those who were seized with it instantly relinquished every hope, and surrendered themselves to an expected death in silence and despair.

Such were the affections of the mind, during the continuance of the disease, in the sick and well.—A frequent consequence was a loss of Memory; and oftentimes an incurable Fatuity. “Some,” says Thucydides, “who quite recovered, had at once totally lost all memory, and quite forgot not only their most intimate friends, but even their own selves.” And this serves to confirm our opinion that the brain suffered great derangement in the plague.

VI. It is probable, from the affections of the head and eyes, and even asserted by Lucretius, that the *vision* was impaired. Some recovered with a total loss of the substance of the eyes.

The condition of the nostrils and fauces, doubtless, impaired or destroyed, for the time, both *smell* and *taste*.

The *appetite for food* is no farther noticed by the historian, than to inform us that no kind of diet seemed to have any curative effect.

The patient's *sense of heat* and *thirst* was intolerable; and so painful as nearly to occasion madness. Though the skin did not seem hot to the touch of the bystanders, yet in the patient it appeared to inflame his whole body. The heat was so excessive that the sick could not bear the slightest covering, or finest linen; but lay naked, in the streets, and even in the wells and cisterns, if they could get into them: hurried away no less by this dreadful heat than by a thirst at once insufferable and insatiable. "For, whether they drank "much or little, their torment still continued the same."

VII. The ulcerations and discharges from the bowels before mentioned, seem connected with some derangement of the *lymphatic system*.

When the patient outlived the first stage, and the disease did not expend its force on the intestinal canal, there seems to have been an absorption of the pestilential fluids, perhaps from the bowels, which were carried into the circulation, and deposited on particular members. In this case, it affected the fingers, toes, and genital organs; and many recovered from the plague with the loss of these parts. Lucretius intimates, that their lives were sometimes preserved by amputation of the organs diseased. "*Vivebant ferro privati parte virili.*"

VIII. The *skin* was not hot to the touch; neither was it cold, nor pallid—"but redish, livid, marked all over with little pustules and sores."*

IX. The plague of Athens appears to have been an acute and continued fever; terminating fatally on the seventh or ninth days, for the most part; but if longer continued, falling on the intestines, in the form of dysentery; or affecting the extremities and genital organs.

When the disease lasted only seven or nine days, there was very little visible waste of the body, and "the strength was "not exhausted."† When protracted, in the shape of dysen-

* Lucretius compares the appearance of the skin to that occasioned by ERISIPELAS; and says, that no excessive heat was to be discovered even "IN SUMMO ARDORE;" by which I conjecture him to mean in the exacerbations of the fever.

† I have uniformly observed in the yellow fever, that few recover who

tery, it commonly proved fatal; exhausting the patient, and reducing him to the extreme of weakness and wasting. When the disease fell upon the extremities, &c. (and according to Lucretius, when a discharge of dark-coloured and fetid matter happened from the nostrils), it seems that the sick commonly recovered.

But, though the fever was usually continued, this was not uniformly the fact. Sometimes it was lingering, and had intermissions. This was its appearance in the case of Pericles; whose body had, probably, been prepared by degrees; and previously worn down by fatigue and grief. He was one of the first victims to the second increase and violence of the plague; having escaped it for three years and a half; and it is probable that the calumnies of his enemies, the ill success of some of his enterprizes, the ingratitude of one of his sons, and the death of the one most worthy of his love, and of whom he was doatingly fond, predisposed him to be affected.*

X. The old and young, males and females, the robust and feeble, were equally exposed to the disease, and equally destroyed by it.

No medicine appeared to have any effect in relieving the pains, or in hastening or promoting recovery.

No person had the disorder twice; or rather none were re-infected.

Those who removed from the country suffered most; not merely because they were worse accommodated than the town's-people, but from so total a change in all their habits.—The historian brings their sufferings before our eyes in a masterly manner.—“As they had no houses, but dwelled all the summer season in booths, where there was scarce room to breathe, the pestilence destroyed with the utmost disorder, so that they lay together in heaps, the dying upon the dead, and the dead upon the dying. Some were tumbling one over another, in the public streets, or lay expiring round about every fountain, whither they had crept to assuage their immoderate thirst. The temples, in which they had erected tents for their

are able to walk about as late as the 5th or 6th day of the disease; when no previous medical assistance has been afforded them. Indeed, it may be confidently affirmed that, where such vigour remains in the muscles, it is not the vigour of health, and the vital parts are proportionally diseased. This unnatural appearance of strength is like that produced by intoxicating liquors: the poison of contagion is meanwhile busily undermining life.

* See Plutarch—Life of Pericles.

reception, were full of the bodies of those who had expired there.”*

It is, perhaps, impossible to make any estimate which may be depended on, of the number of persons who died of the Athenian pestilence. The disease continued four years and a half from its commencement; during three years of which time the mortality was constant. For eighteen months it abated, but was not extinct. Thucydides, when he mentions the disease the last time, gives an imperfect account of the number of deaths. Whether this account is meant to include the whole, or only those who died in the last year of the plague, is uncertain. Probably the whole is meant of those who died at Athens; but it is still doubtful whether he computes the loss sustained by the troops engaged in foreign service. In this dilemma we can do no better than to quote the words of the historian himself, in the language of his translator:—“It appeared, from the muster-rolls, that there perished 4400 of those citizens who wore heavy armour, and 300 of the horsemen. The number of the lower people who died was not to be computed.”

It remains for us to assign some probable reasons for the cessation and disappearance of the pestilence whose history we have been considering. These will be found in the following circumstances, which preceded and accompanied its departure.

1. The whole people of Attica, with the exception of such as were employed in the armies and in the garrisoned towns, had been included within the walls of Athens for near six years. Though habitually addicted to a country life and vegetable diet, from which they had been mostly restricted, they must, in so long a period, have gained, in some measure, new habits, become reconciled to their mode of life, and gradually hardened against the operation of contagion.

2. Numbers had recovered from the disease; and, as none were twice affected, they enjoyed an immunity from its attacks.

3. Several thousands of their countrymen had fallen in battle; many were captive in other countries; they had garrisons

* Compare the situation of these people with that of the Irish emigrants to New-York, in 1795. See the Rev. Mr. O'Brien's letter to Mr. Bayley, in his account of the fever of 1795, p. 89.—Of more than 700 persons who died in New-York, in 1795, only 150 were citizens. See Webster's Collection, last page.

in several of the foreign states, armies in others, and a prodigious fleet, full of mariners and soldiers triumphant over the sea. This diminished the number of inhabitants in Athens, and allowed more room, and a greater quantity of suitable food, to those who remained.

4. Many thousands fell victims to the plague; and the deaths were chiefly among those who were most crowded together. Opportunity was thus given for those who survived to acquire better lodgings, and better accommodations of every kind.—It is probable that the deaths, by war and disease, and the space vacated by the armaments abroad, diminished the population at least a third.

5. The same season that the plague broke out a second time, Athens, Eubœa, and all the neighbouring country, felt the shocks of successive earthquakes. The next spring new earthquakes happened, so as to deter the Peloponnesians from entering Attica. The sea broke over the land in Eubœa, and on the continent, a little above Athens. This was the last year of the plague. The next season (year 425) was very tempestuous: and though the Peloponnesians entered Attica, yet they came so early as to do very little damage, and were obliged to retire after a stay of only fifteen days. They never repeated their incursions; and the next year another earthquake was felt. Is it not probable that such a succession of tempestuous seasons materially affected and altered the atmosphere of Attica and Athens?

6. But, perhaps, the most material advantage derived from these stormy seasons was, that they put an end to the blockade of Athens, and to the war on the land-side. Thus the people were, once more, allowed to issue from the city; to revisit the deserted country; re-erect their rural habitations; extend the cheering and beautifying hand of cultivation to the desolated and afflicted fields; to crown their heads with chaplets, and their boards with fruits.—The last ravages of any extent, committed by the Peloponnesians, were in 427; they were deterred from renewing them in 426; and the pestilence ceased with that year.

THE history of the *Plague of Athens*, now concluded, offers so many points of resemblance, both in its nature and origin, to our own fevers, that we may be justified in declaring it to have been, in all essential particulars, the same dis-

ease. A minute comparison, should it display minute dissimilarities, could scarcely fail of presenting as many minute similarities; and a due consideration of every circumstance cannot but impress the mind with a deep conviction of the unity of cause, in ages so remote. This point, so well established, ought to make us careful how we overlook the more obvious sources of pestilential diseases, in our search after those which are foreign and remote. If local causes originated a pestilence in Athens, local causes may generate a Yellow Fever in Philadelphia and New-York. To these, then, be our attention more scrupulously directed; and let us be more solicitous in the inspection of our houses, yards, streets and docks, than of cottons and woollens, of vessels from the West-Indies, and ships from the Mediterranean.*

* Since the fore part of this Essay was printed off, I have been able to obtain the passage of HALLER, from which, on the authority of DE PAUW, I had ventured to assert, that the illustrious Swife considered that disease as an ordinary contagious fever—(See page 23).—This assertion is not correct—though the difference is not material to the argument.—HALLER's opinion is expressed negatively, in the following words:—"Non putes verinominis pestem fuisse."—Biblioth. Med. Pract. tom. i. p. 102.—The whole passage is too long to be quoted in this place. S.

ARTICLE II.

REMARKS ON MANURES:

Wherein, by an Inquiry into the Nature of Septon, (Azote) and its Relations to other Bodies, it will be seen how nearly Physic and Farming are allied to each other. Intended as a Sequel to Judge PETERS's Agricultural Inquiries on Plaister of Paris. By SAMUEL L. MITCHILL, Member of the Legislative Assembly of the State of New-York, Fellow of the Royal Society of Edinburgh, Professor of Chemistry, &c. in Columbia College, &c. &c.

IT will appear from the perusal of a great number of books, that an opinion, grounded on fact and long observation, has, from early ages, prevailed among writers, that there was something of an *acid* nature produced in the atmosphere.

leather, to prevent the transparency of the first layer, as I think, from the description in 13 Plin. 12. 6thly. The *membrana*, which I also suspect to be a kind not so well dressed as, 7thly. the *pergamena carta*, which approached our parchment: a manufacture promoted by Eumenes, king of Pergamus. 8thly. Bark, paper *è cortice læneotica*. 9thly. Coarse wrapping paper, used by tradesmen, made out of coarse paper and straw, *emporetica*. 10thly. The *Papyrus*. Consistence was given to all these by size, or by paste, made of flour, or by boiling the crumbs of fine bread. The *membrana charta*, the *charta coriacea*, the *pergamena charta*, and the *charta papyri*, were all liable to be moth-eaten, “aut tineas pasces taciturnus inertes,” Hor. Ep. 20. For the various other denominations of paper, as the *hieratica*, or paper for religious treatises, the *liviana*, and *augustina*, or royal paper; the *fanniana*, from a paper-maker of that name, the *saitica* from Sais in Egypt, *læneotica*, the *emporetica*, &c. I refer generally to 13 Pl. 12.

“The *charta è corio*, mentioned by Ulpian, I have already noticed. Justinian, whose institutes were published in the year 529 of our æra, enumerates tables, paper, and dressed skins. *Litteræ quoque licet aureæ sint, perinde chartis, membranisque cedunt*, 2 Inst. tit. 1. sec. 33. *Sed si titio petas tuos libros tuasve membranas*, (qu. does not this imply that the parchment was not used for books?) Ib.

“*Nihil autem interest, testamentum in tabulis, an chartis, membranisque, vel in alia materia est*. 2 Just. Inst. tit. 10. sec. 12. Hence also it appears, that the letters were sometimes gilt, (embossed and burnished, from whence I suspect arose the practice of illuminating missals.)

“The paper books attributed to Numa, were certainly forgeries, as appears from the anachronism of their containing pythagorean tenets. 13 Pl. 13.

“The *papyrus*, whence our appellation paper, deserves further notice.

“The *papyrus*, according to Pliny, was made of the thin pellicles (phytyra) of the stem of the plant called *papyrus*, growing in the Nile, about ten feet high, in about three or four feet water.

(Bruce has given a plate of it.) The centre coat was best. When separated by a sharp-pointed instrument, and laid across each other at right angles, they were moistened, then pressed, and dried in the sun. Generally, the saccharine mucilage of the plant itself, (a great part of which was an article of food,) was sufficient to give an even and smooth tenacity to the pellicles thus separated, when pressed. If not, they were moistened with a kind of paste, or starch, made of wheat flour and vinegar, then dried, and beaten with a mallet. Sometimes with a paste, made by boiling bread and straining it. The Romans, under the emperors, used to polish the papyrus, thus treated, with smooth ivory, and subject it to rollers and presses.

“ In making up a book, the written paper was rolled on a stick or roller, *umbilicus*: the ends of the umbilicus, *cornua*, were much ornamented. So was the outside of the volume, (*volumen*, roll,) called *frons*. The title *συλλαβή* (whence our syllable,) was then stuck on the outside. The whole volume might be about three feet wide, and forty or fifty feet long. The books found at Herculaneum and Pompæi, according to the late report of the Rev. Mr. J. Hayter, whom the Prince of Wales employed, about ten years ago, to examine and unroll them, are of papyrus upon wooden rollers: the leaves are from one to three feet broad, and when unrolled extend from thirty to forty feet. He says, the ink contains much gum, and no acid. Hence it should seem, that they were written on by means of a reed (*calamus*) dipt in the *atramentum librarium* of Pliny, which was fine size and lamp black. It was common to insert a piece of parchment between every four or five leaves of papyrus, to support them. Much pains was taken by the paper makers and bookbinder: thus Horace *ad librum suum*, *epist.* 20.

“ *Vertumnum, janumque liber spectare videris.* (That is, you will be sent to the Forum, where these statues were erected.)

“ *Scilicet ut prostes, Sosiorum pumice mundus.* (Polished with the pumice, and for sale at the bookstore of the Sosii.)

“ Sometimes the leaves before writing were first polished with a tooth, 13 Pl. 12. For more on the subject of papyrus, see 5 Herod.

53. 4 Theoph. 9. 13 Pl. 11, 13. Drummond and Walpole's *Herculanensia*, Dissertation 3th, and Bruce's travels, who has given a good plate of the papyrus.

"Job xxxi. 35. talks of writing a book. I think, with many divines, this is a sacred drama of eastern origin. If so, this book implies the use of papyrus at an early date. See 1 Gog. 187.

"Phyllya, 13 Pl. 11, is not only the name for the finer interior filament of the papyrus, but of the maple, the sycamore, the beech, the mulberry and the linden tree, all which were occasionally converted into paper, when sized, beaten, dried, and rolled. The common paper in the time of the emperors was from nine to twelve inches square.

"The papyrus paper was succeeded by paper made of cotton, or at first perhaps of silk; for although the cotton paper acquired the name of *charta bombycina*, yet it is highly probable, that the refuse silk was first applied to this purpose, as in China. The Indian, or finer silk, was *sericum*, (*inter sericos jacet pulvillos*,) the inferior, or Syrian silk, was the *bombycinum*. By and by, the frauds of the paper-makers, substituted the byssus, or cotton, but still it was sold as silk paper: till coming into common use, all the cotton paper retained the name of *charta bombycina*. The papyrus continued in use at Rome from about two hundred years before Christ to the end of the eleventh century, when many of the papal bulls, according to Father Mabillon, were written on papyrus. Montfaucon mentions a manuscript on this paper in the king's library at Paris, of the date 1050. Parchment was also still in use at the same period."—p. 163.—168.

In the course of our labours we have frequently, and with great pleasure, borne testimony to the rapid improvements in American typography. On the present occasion, however, we are compelled to remark, that the mechanical execution of the present volume would disgrace the state of the arts as cultivated by our Plymouth forefathers.

ART. III. *An Essay on the BILIOUS EPIDEMIC FEVER, prevailing in the state of New-York. To which are added, a Letter from Dr. JAMES MANN, Surgeon General to the Army, and a Dissertation by Dr. JOHN STEARNS, delivered before the State Medical Society, on the same subject. With Notes and Observations on these productions. By CHRISTOPHER C. YATES. Albany. H. C. Southwick. 8vo. pp. 43. 1813.*

In the first volume of the Register, p. 37—96, we offered to our readers a brief analysis of Dr. Strong's Dissertation on the Petechial or Spotted Fever, as it prevailed in Connecticut, and in some of the eastern states. In the same volume, p. 226—244, a full view was taken of the able Report of the Massachusetts Medical Society, upon the same disease, as it appeared in that state, accompanied with some editorial remarks upon the peculiar character of the disorder. In our second volume, p. 440, we announced the treatise of Dr. North. Beside the reviews of these works, which, we believe, are all that have been given as distinct publications on the spotted fever, several original communications on the same disease may be found in the pages of this journal. We state this, in order to facilitate the inquiries of those who are desirous of obtaining all the information they can relative to the epidemics, which, within these few years, have caused so great mortality in the United States.

The disease, which is the subject of the pamphlet before us, like the epidemic lately so prevalent in the eastern states, has, from the peculiar character which it assumes, and the fatality which accompanies it, deservedly attracted the attention of medical practitioners. The remarks which have

been made upon it are, as yet, confined chiefly to the ephemeral columns of the newspapers, and indeed the pamphlet of Dr. Yates, with the exception of some few pages of it, is made up of materials from these sources. But it is matter of little moment through what channel the opinions of our medical brethren are communicated to the public, provided those opinions be deliberately formed, and candidly given, without prejudice or illiberality, and are the result of attentive observation and experience. That such, however, is not the fact, and that the opinions which have been offered on this disease have, in a majority of instances, had their origin in a partial and erroneous view of its nature, and that they have been maintained for the purpose of supporting some pre-contrived theory, and of giving plausibility to some favourite practice, is sufficiently evident from the general complexion of most of the essays on the subject which have come within our notice. Different physicians, living in the same district of country in which the disease prevails, often witnessing the same cases of the disorder, laying claims to equal experience in the management of it, and boasting of equal success in the result of their practice, are the abettors of theories and modes of treatment diametrically opposed to each other. The disease, says one, is purely inflammatory, and depends upon a sthenic diathesis of the whole system, copious depletion is indicated, and large and repeated blood-letting is had recourse to. The reverse of all this, says another, is the fact. The disease is, from its commencement, characterised by every symptom of the lowest species of typhus, and to arrest its putrid tendency, the most powerful and diffusible stimulants are requisite, and brandy and laudanum, spiced wine and æther, are poured down without measure. We will not insult the understanding of the reader, with facts of this kind in his recollection, by introducing any arguments to prove, that the great mortality of the epidemic,

now prevalent in this state, like that of the spotted fever of Connecticut, has been caused by such extraordinary and unjustifiable methods of treatment.

Our opinion of the nature of the present epidemic, (if strictly speaking, it may be called an epidemic,) and of the method of cure, which we believe will be found most successful, and which, indeed, as far as our experience goes, and from all that we can learn, has actually proved the most beneficial, may be found in a preceding article in this number.* The name, *Peripneumonia Typhodes*, under which this disease is there described, appears to us to convey the most accurate idea of its nature, and our subsequent opportunities of observation, since that article was penned, give us additional reason to adhere to the opinion there advanced. That the present epidemic is a "new calamity," and "unknown" before in this country, we can no more admit, than that it is the yellow fever of the West Indies; and we regret that any writer of respectability should so far have committed himself as to have pronounced such an opinion. The powerful agency of climate, season, temperature, the local circumstances of country, variety of situation and of constitution in the origin and modification of diseases, are well known to all who are conversant with the history of epidemical disorders; and to this agency, we have the highest probable evidence, we may attribute whatever peculiarity of character this disease has assumed. But we return to the Essay of Dr. Yates.

The fever here described under the name of bilious epidemic fever, made its appearance, according to Dr. Yates, in the city of Albany, in October, 1812. The few cases

* See Dr. Hosack's observations on the *Peripneumonia Typhodes*. See also Dr. Williamson's observations on the Malignant Pleurisy.

which then occurred not being characterized by any peculiarity in its symptoms, excited no suspicion. About the middle of December many were attacked with it in a severer degree, but still there was no particular cause of alarm until the beginning of the following month, when a few cases assumed the deceptive appearance of violent pneumonic inflammation, and in which the ordinary treatment, instead of removing the disease only hastened it to a fatal termination. During the month of January, many patients who were attacked with the disorder died, and the "clashing practice" adopted by different practitioners, increased the mortality. From the success of the method of treatment pursued by Dr. Yates, he was induced to publish his observations on the disease, which he did on the 26th of the same month, in the newspapers of that city. His subsequent practice, after this period, afforded him opportunities of becoming more familiarly acquainted with the nature of the disease, and enabled him to enter more fully into a description of its symptoms, nature, and treatment. We shall make an extract or two from this part of his work.

"The REMOTE CAUSE of this fever appears to be *general*, being confined to no particular district, town, city, or village. From this circumstance we are induced to consider it as existing in the air : how or from what cause we cannot tell.

"The EXCITING CAUSES may be various ; intemperance in eating, or drinking spirituous liquors, fear, anxiety, exposure to excessive heat or cold ; in short, all the causes which generally bring on common colds.

"The PROXIMATE CAUSE appears to be a secretion of morbid, acrid matter, or vitiated bile ; this secretion taking place in so large and important a gland as the liver, on whose healthy action the division and assimilation of our food depends, and the consequent purity of the blood, has a tendency to excite, create, and ac-

cumulate the sudden, distressing, and alarming symptoms, which, as it were in a few minutes, usher in this disease.”—p. 18.

“ This disease is confined to no particular stage of life. Children and old people were less liable to it than the middle aged and young. Men were much more subject to it than women.

“ PREMONITORY SYMPTOMS were not always discoverable. Sometimes a lassitude and indisposition to action, and erratic pains through the chest and sides, preceded the attack for a day or two, and sometimes the pain in the head and back were so light for two or three days, that the patient felt no disposition to make serious complaint.

“ The GENERAL SYMPTOMS of an attack of this fever are,

“ 1st. *Cold chills*, which last but few hours, and are succeeded by,

“ 2d. A degree of *heat on the surface*, little above natural.

“ 3d. *Pain in the head*, arms, small of the back, and lower extremities.

“ 4th. The blood vessels of the eyes preternaturally distended.

“ 5th. *Tongue* pale and moist, with little fur.

“ 6th. An uncommon degree of languor and debility pervading the whole system.

“ 7th. More or less nausea, and sometimes vomiting.

“ 8th. *Pulse* weak, soft, and a little quicker than in health.

“ An increase or severity of these symptoms, premonish an attack which forms the most serious state of this disease, in which case

“ The *chills* assume a degree of oppressive anguish to the suffering patient, which to some has been more intolerable than any other symptoms, and recur frequently during the first twelve hours; many, however, do not suffer these chills to this excessive degree :

“ The *pain in the head* becomes more excruciating, and is not confined to one part ; the forehead, back and sides are alternately affected :

“ The *eyes* feel heavy and painful, and their vessels become more turgid with blood, which gives them a dull red appearance :

" The *face* exhibits a universal flush in those who in health were not marked with distinct red cheeks, those who were, now have their cheeks more of a *livid* than red colour :

" A pain more or less severe in the *right side*, in the region of the gall bladder, passing up towards the neck, and settling between the shoulder blades :

" Faintness, delirium, a suffocating sensation across the *breast*, with little or much difficulty of breathing, catching at half inspirations, as if the lungs could not be filled with air, not from a painful sensation, as in pneumonic affections, but an apparent repugnance in that organ to inhale, as if the air were noxious or impure.

" *Tongue* continues pale in most cases during the continuance of the fever, though in some few instances dry, (and then only for a few hours at a time) and of a yellowish or light brown cast, *fur* trifling.

" Pain in the *back* and *extremities* much increased.

" A cough and difficult expectoration usually attend. The phlegm is in many cases accompanied with a little blood, but mostly only tinged with it, evidently owing to the violent exertion of coughing, or it probably issues from small ruptured blood vessels about the throat.

" The state of the *stomach* appears the same as in common bilious fever, being more or less affected with nausea at the commencement. Some vomit, others incline to vomit, or feel but the slightest degree of nausea. When the vomiting is spontaneous, the matter thrown up is invariably yellow or green coloured.

" The *bowels* exhibit nothing peculiar until acted on by medicine.

" The *skin* easily disposes to moisture after the stomach and bowels have been well evacuated. I have found it unnecessary, in most cases, to encourage perspiration by warm drink; an additional blanket or two will suffice, if the patient does not readily sweat under the usual covering.

" The approach of *death* is indicated by a cessation, for many hours, of all distressing symptoms, respiration, instead of laborious, now becomes less difficult, though short and hurried, and seems to

excite little uneasiness: the countenance and surface of the body become livid, or of a lead colour, resembling the body of a drowned person; the patient, and attendants, unaccustomed to these appearances, are flattered with the hope of a recovery."—p. 20—23.

In some further remarks on the nature of this disorder, the author remarks, "That the affection of the lungs in this disease is not primary, but sympathetic, appears to me as clear as the sun at noon day," p. 27. In support of this opinion, he states the powerful efficacy of emetics and cathartics in unlocking the biliary vessels by which the oppression on the lungs "immediately yields or vanishes." We are not disposed to controvert the theory Dr. Y. wishes to establish, provided a successful mode of practice be the result. But for ourselves we cannot admit the position attempted to be maintained, that the prominent characteristic of the disease evinces its bilious nature; and the facts which have come to view from the dissections which have been made of those who have died of this epidemic, instead of proving the liver to be the "reservoir," whence the noxious matter of the disease is diffused through the system, clearly establish the fact that we must look to a very different part as the principal seat of the mischief. We therefore cannot but object to the name by which Dr. Y. has distinguished this disorder.

His method of cure is thus briefly stated.

"The *method of cure* which I have pursued in this disease, I shall state in a few words. When called to a patient labouring under the symptoms of this fever, my first prescription is, *in all cases*, an

"EMETIC of tartarized antimony, sometimes combined with *ipe-cacuanha*, and sometimes with *calomel*. If this operates, the discharge from the stomach is in *every case* yellow or green bile in

great quantities, sometimes mixed with or followed by a whitish, slimy, compact substance; if it operates on the bowels, their discharges are dark coloured, mixed with green bile; and are generally *very fetid*. If the emetic does not operate as freely as I wish, I repeat the dose. I follow this prescription, notwithstanding it may have operated on the bowels, with a cathartic of jalap and calomel. I hardly recollect a case in which a cathartic did not operate on its first exhibition. I have in no disease found the bowels more susceptible of being moved by a single dose. The cathartic always produced copious evacuations of bilious matter, sometimes assuming the appearance of *strong lic*. An additional dose on the third day of the disease, often cured my patient in the *milder attack*.

“In the *severer attack*, I commence in the same manner, with first an *emetic*, and then a *cathartic*; if the symptoms become stronger or more violent, my exertions are proportionably so to evacuate the contents of the stomach and intestines.

“If the patient grows weaker, and the symptoms do not abate, I repeat the emetic; this throws up in some cases greater quantities of bilious matter than the first I administered. Relief invariably succeeds this last evacuation. I now continue cathartics in smaller doses, but often repeated; for this purpose I have chosen of jalap and soluble tartar equal parts; of this compound I gave twenty grains every two or three hours, so as to keep the bowels in motion until the pain in the side and distress of breathing yield; after which I continue it in a limited degree until the evacuations change to a more natural colour, which is generally not till the 6th or 7th day. It is very common for the patient, while in a state of apparent convalescence, to have suddenly a return of pain in the head, or side, and distress in breathing. I now again have recourse to a powerful emetic, and this relieves the patient immediately after its operation; the discharges are as copious, and to appearance, as bad as they were, in the first stage. These pains always indicate a collection of morbid matter.

“I have not, since the 26th of January, given *any other medicine* in this disease than emetics and cathartics. My whole atten-

tion is confined to a removal of the morbid bilious secretions which are unquestionably collected, and continue pouring into the gall bladder: probably giving rise, by distending that viscus, to the pain in the right side.

“ I have not found it requisite in any case to use medicinal tonics to restore my debilitated patients; whenever the bowels and liver resume their natural and healthy action, the appetite returns, and food becomes the best and most natural tonic, beginning with weak soups, and gradually proceeding to more solid substances.”—p. 23—25.

We have nothing to remark upon the treatment adopted by Dr. Y.; it doubtless proved very successful in *his* hands, as he has mentioned. The letter of Dr. Mann, and the dissertation of Dr. Stearns, appear next in order in the *Essay*. They are inserted at length in the present number of the *Register*, and are left to the judgment of the reader. Of the notes which our author has annexed to them, we are constrained to say, that they are not written in the temper we could wish, and which, indeed, the respectability of his opponents and the nature of the subject required. After all, the theory which Dr. Yates has advanced of the nature, seat, and proximate cause of this disease, is, in our opinion, insufficient and unsatisfactory; and the attempt to explain the phenomena of general disorder which pervades the system in this epidemic, by referring them to the *liver* as their source, is indeed taking a limited and local view of the subject. The best part of Dr. Yates' performance is that which contains his animadversions upon the unjustifiable and destructive stimulant practice of treating the epidemic, and for his early and salutary remarks we present him our warmest thanks.

Regents of the University, the Trustees, and other officers of that institution, &c. &c. The degree of Doctor in Medicine was granted to the following twenty gentlemen, eleven of whom were regular students of the College, had undergone the requisite examinations prescribed by its laws, and defended the respective inaugural dissertations annexed to their names.

ROBERT M. BARCLAY, A. B. of Orange county, N. Y.—“*On Marsh Miasmata.*”

CHARLES DRAKE, of the city of New-York—“*On the Proximate Cause of Inflammation.*”

GIDEON C. FORSYTH, of the city of New-York—“*On the Blood.*”

JAMES FOUNTAIN, of Westchester county, N. Y.—“*On Typhus Fever.*”

JABEZ W. HUSTED, of Westchester county, N. Y.—“*On Tetanus.*”

FREDERICK J. HILL, of North-Carolina—“*On Gout.*”

RICHARD I. LUDLOW, of New-Jersey—“*On Respiration.*”

SAMUEL MAXWELL, of Montgomery county, N. Y.—“*On the Transfusion of Blood.*”

ISAAC ROOSEVELT, A. B. of the city of New-York—“*On Angina Pectoris.*”

DIRK G. SALOMONS, of St. Eustatia, W. I.—“*On Human Intestinal Worms.*”

DELOS WHITE, A. B. of Otsego county, N. Y.—“*On Ulcers.*”

The honorary degree of Doctor in Medicine was conferred on the following gentlemen :

ALEXANDER SHELDEN, of the county of Montgomery.

JOHN STEARNS, of the city of Albany.

WESTEL WILLOUGHBY, Jun. of Herkimer county.

OLIVER C. COMSTOCK, of Schenectady county.

WILLIAM KIRKPATRICK, of Onondaga county.

JOSEPH WHITE, of Cherry Valley, Otsego county.

DAVID BAILLIE WARDEN, American Consul at Paris.

ANDREW MORTON, of the city of New-York.

JOHN AUGUSTINE SMITH, Professor of Anatomy and Surgery in the College of Physicians and Surgeons.

History of the YELLOW FEVER, which prevailed at PERTH AMBOY, (N. J.) in the summer of 1811, and of the evidences of its importation into that place.

WE at length give place to the following report on the yellow fever, and the official proceedings of the Board of Health relative to the same. Our only apology for having so long delayed the publication of these interesting papers, is, that we have not had room for them before, the pages of the Register having been occupied with the favours of our numerous and highly respectable correspondents. In the publication of this statement, we shall only remark, that if the facts now given relative to the introduction of the yellow fever into the city of Amboy, do not carry conviction to the minds of all who peruse it, we may truly say, *neither will they be persuaded, though one rose from the dead.* ED.

Board of Health of New-York, September 16, 1811.

The Honourable DE WITT CLINTON, *President.*

Information having been given to the board that a dangerous, malignant, and infectious fever now prevails at the city of Amboy, in New-Jersey; it was resolved, that it be recommended to his honour the Mayor to issue his proclamation interdicting all communication between the said city of Amboy and this city.

Resolved also, that a committee be appointed to confer with the health officer at the quarantine ground, and obtain from him, and from such other sources as they shall judge advisable, information of the existence of the said disease, and

other facts deemed necessary by them, and report with all convenient speed to this board.

Resolved, that the committee appointed, be Dr. Joseph Bayley, Dr. John H. Douglass, of this board, and Dr. David Hosack, of this city, and that the health officer, Dr. Rodgers, be associated with them.

September 19, 1811.

The committee appointed to confer with the health officer, and to ascertain the facts respecting the disease prevailing at Amboy, presented the following report, which was approved, and ordered to be entered on the minutes.

Report of the Committee appointed by the Board of Health to investigate the nature and origin of the disease now prevailing at Perth-Amboy, New-Jersey; addressed to the President and Members of the Board:—

Gentlemen,

Agreeably to the instructions conveyed by the resolution of the Board of Health, we yesterday proceeded to Perth-Amboy, for the purpose of obtaining information relative to the nature and origin of the disease, at present prevailing in that city. The health officer, Dr. Rodgers, having been appointed, with us, a member of the committee, we waited on him, at Staten-Island, with the hope that as he had been at Amboy, and had seen some of those persons who had died of the disease, he would have had it in his power to furnish the information required, and perhaps rendered our visit at Amboy unnecessary; and in case he should not be in possession of the facts which would be expected by the Board of Health, to request him, as a member of the committee, to accompany us, for the purpose of making the necessary inquiries. Upon our arrival at the quarantine ground, we accordingly stated to the health officer, that information had been received by the Board of Health of the prevalence of an infectious disease at

Perth-Amboy, which had excited considerable alarm among the citizens of New-York. That in consequence of this information, the mayor had thought it necessary to issue his proclamation, interdicting the communication between the two places; and that the Board of Health had appointed a committee, for the purpose of inquiring into the facts upon this subject: that Dr. Miller, the resident physician, had been requested by the board to be a member of the committee, but owing to unavoidable engagements, he had declined the appointment: that thereupon they considered it expedient to request the health officer to perform that duty, and understanding that he had already been at Amboy, and had expressed an opinion of the nature of the disease, they had been in expectation of receiving from him an official statement of the facts that were now sought for. Dr. Rodgers replied, "that he did not consider the Board as having any right to expect a communication from him relative to a fever at *Amboy*." We then observed, that as a constant communication existed between Amboy and New-York, and that as the disease might be conveyed to the latter city, they expected from him, as the sentinel at the out-post, every information in his power to communicate; and that by a resolution of the Board, they certainly did expect that he would also communicate to us the facts that had come to his knowledge. Dr. Rodgers then stated, "that when this disease might come under his purview at the quarantine ground, he should consider it his duty to make such communication, but not till then;" and added, "You had better, gentlemen, proceed to Amboy to seek information for yourselves;" that his duties did not permit him to accompany us; that he should probably go again to Amboy to-morrow, and pay a visit of friendship, as his two former visits had been, but should not go in an official capacity. We then expressed the hope, that if he did not think it proper to accompany us, that he would favour us with his opinion of the

nature of the disease, and the facts relative to its origin. This also he declined, observing, "that he was delicately situated, and did not wish to express to us an opinion on this subject." We then asked him if he had any objection to give us a statement in writing for the information of the board, and that we would call for it on our return from Amboy. This he also begged leave to decline, adding, however, that if the Board of Health would do him the honour to address him a letter, stating the points on which they wished information, he would answer their questions. We then read to him the resolution of the Board, requesting us to obtain from the health officer such information as he possessed on this subject, and added, that we considered the application conveyed by the present resolution as sufficiently respectful, and expressive of the wishes of the Board for him to communicate the information requested: he however persisted in declining to express to us, as a committee from the Board, either verbally or in writing, any opinion on this subject; repeating, "that his situation was a very delicate one." We then observed, that we had understood he had publicly expressed his opinion, at Amboy, of the nature of the fever prevailing there; he acknowledged he had visited Mr. Kearney at Amboy; that he had also seen Mr. Compton, and that he did express to the two physicians of that place, and in presence of a third person, that Mr. Kearney's case was that of malignant fever of the highest grade. As the term malignant fever appeared to us of ambiguous import, we next inquired if he considered the fever referred to as the *yellow fever*: to this question he answered, he disliked the term *yellow fever*, considering it an improper one, but admitted that the disease was such as would by many persons be denominated yellow fever, and particularly mentioned, that the patient had the *glassy eye* and *yellow skin*. We next asked him, if Mr. Kearney had had the *black vomit*; to this he replied in the affirmative, but

that in the other case the stomach was not so much affected : he also stated that Mr. Kearney had been subject to attacks of *bilious fever*, and that upon this late occasion, had been very much fatigued, and prior to his attack had been exposed to the sun without an umbrella. We repeated our request, that he would accompany us on our visit, but he again declining to comply with our wishes, we considered our conference at an end. We immediately proceeded to Amboy, and called upon Mr. Daniel Perrein, the collector of the port, and Dr. Nathaniel Manning, the physician who had attended on all those who had been attacked with the disease. The other physician being out of town, we had no opportunity of conversing with him. Dr. Manning informed us, that he had lost four patients with a fever, which, from its peculiar symptoms, and great mortality, he considered to be the yellow fever ; that although he had been two years and a half a practitioner in Perth Amboy, and his partner, Dr. Freeman, had practised medicine in the same place many years before him, and both had been familiarly conversant with the fevers which ordinarily prevail in that city and its vicinity, particularly the bilious remittent, yet that they had never, before the present season, met with any fever attended with the symptoms of that of which their late patients had died, and with which others at that time were affected ; and as further evidence, Dr. Manning remarked, that at that very time he had patients ill of both diseases, each exhibiting its characteristic symptoms, and invited us to see them. He also stated, that our health officer, Dr. Rodgers, had visited, with him, two of the first cases, and had pronounced them as decided cases of the yellow fever as he had ever seen.

Dr. Manning then gave us an account of those persons who, in his opinion, had died of the yellow fever, namely, James Compton, who was attacked on the 7th, and died on the 10th instant ; James Kearney, attacked on the 9th, and died on the

14th; Joseph Compton, attacked on the 11th, and died on the 15th; and Mrs. Crowell, also attacked on the 11th and died on the 15th. He observed, that a Mrs. Marsh, an elderly lady, died yesterday morning, the 17th, after a week's illness; but her disease did not appear to be characterized by the same symptoms that had distinguished the cases of the first persons that have been mentioned. The first four, he remarked, were all seized with severe pain in the head, back, and limbs, attended with a highly inflamed state of the eyes. On the second or third day, the skin, especially about the neck and breast, became yellow, which colour gradually extended over the greater part of their bodies; and in all, the stomach was very much affected with a sense of heat or burning, and rejected almost every thing received into it; which symptoms he had never found associated in the ordinary autumnal, or any other fevers in that place or neighbourhood. We asked him particularly if he had seen Mr. Kearney in any of his former attacks of fever, to which he had been subject in the autumn, as before related to us by Dr. Rodgers. He replied, he had been his physician in two such attacks, and that his disease exhibited the ordinary characters of our common autumnal remittent fever, and was totally different from the inflammatory symptoms with which he was attacked in his last illness. He particularly remarked, that Mr. Kearney threw off a great quantity of black matter, resembling coffee with the grounds, and mixed with other portions in the form of flakes. We next asked Dr. Manning for his opinion relative to the origin of this extraordinary disease. He replied, that there was but one opinion, either with the inhabitants or physicians, namely, that it was derived from some of the West India vessels, which had been lying at the wharves; observing, however, that the brig Ocean, from St. Bartholomews, was the vessel which the inhabitants in general supposed to have introduced it. The town we observed to be remarkably ele-

vated; the soil chiefly composed of sand; free from all lodgements of water; the streets wide, and the houses for the most part spacious, and at a considerable distance from each other: and the whole town exhibiting an uncommon degree of cleanliness. Dr. Manning also informed us, that there were no local causes to which this calamity could possibly be referred, and that it could only be accounted for as arising from intercourse with the vessels at the wharves; and that the citizens were so perfectly convinced of this fact, that they had ordered them to be removed to the stream. He further stated, that Mr. Kearney and the two Mr. Comptons had all been frequently on board the brig *Ocean*, and another vessel lying along side of her, the ship *Favourite* from the Havanna, both of which vessels had come consigned to Mr. Kearney. He also observed, that Mr. Joseph Compton had not only been on board of the vessels at the wharves, but that he had set up with his brother James during his illness. Mrs. Crowell, the fourth person mentioned, was the wife of a ship carpenter, who resides at the head of the wharf, within fifty yards of the said vessels. Dr. Manning also stated, that Mrs. Crowell was so near to the vessels, that upon one of them (the *Ocean*) having her bilge water pumped out, she was made very sick by the smell of it, the wind blowing directly towards the house, and into her apartments, and that she herself, during her illness frequently declared to her physician and friends, that in her opinion she had thus taken the disease. It will be readily observed, that the same wind which blew the effluvia of the bilge water, would also convey the poisonous vapour from the adjoining vessel. Having received this information from Dr. Manning, we accompanied him in his visit to five of his patients whom he considered to be the most dangerously ill. We united with him in opinion, in pronouncing three of those, viz. Miss Ann Taylor, Captain James Baynon, and Mr. Voorhees, to be *decided cases of yellow fever.*

The diseases of the two others, Mr. Semple and Mr. Kane, were readily distinguished as the *common bilious remittent of autumn*. The alarming situation of Miss Taylor particularly arrested our attention, although this was the second day of her illness; her symptoms (so peculiar are the features of this disease) were of a character, that declared her to be in the most imminent danger, and with all the kind assistance she receives from her amiable sisters, and the skill of an attentive physician, we have too much reason to fear that she must soon be numbered among the victims of this deadly disease. Miss Taylor resides some distance from the source of infection, but on inquiry, we found she had been unfortunately in the neighbourhood of the vessels, by frequently visiting a friend in the house adjoining to that in which Mrs. Crowell lay ill and died, and that too, at the very time of Mrs. Crowell's illness. We learned also, that the other persons taken ill, had been exposed either directly by being on board the vessels, or by visiting those who were ill of the disease. Many other persons, Dr. Manning informed us, had been just seized with fever, but so recently, that he would not yet undertake to pronounce on the character of the disease. Our attention was also directed to the vessels supposed to have introduced the fever. For this purpose, we applied to the collector of the port, who furnished us with the following facts. That twelve vessels had arrived at that port from the West-Indies, since the first day of June. That many others had arrived from Ireland, full of passengers, in a most filthy condition, but remarkable healthy. He then informed us, that the brig *Ocean*, the vessel at first suspected, arrived at the wharf on the 4th September, from Bartholomews, that she was laden with rum, sugar, molasses, and coffee, that four or five days after her arrival, she began to discharge her cargo. The master, Captain Sutton, being in New-York, we had no opportunity of obtaining any infor-

mation from him. The collector stated, that Mr. Kearney, as the consignee, was frequently in the hold of the vessel. Captain Little, a passenger in the Ocean, informed us, that her crew had been healthy, but admitted that her bilge water was in a very offensive state, and that in this respect, she was a filthy vessel, but not more so than West-India traders in general. Mr. Perrein next stated, that the ship *Favourite*, James Stuart, master, the other suspected vessel, arrived from the Havanna, and came to the dock on the 30th August, and was also consigned to the late Mr. Kearney, and that she, with the other vessels, was removed to the stream on Sunday last; he added, that Mr. Kearney, the consignee, and the two Mr. Comptons, had been also frequently on board of this vessel. Captain Stuart being in Amboy, we availed ourselves of the opportunity of conversing with him, relative to the state of his vessel. He, with great frankness, gave us every information we requested; he stated, that he first went to North Carolina from Perth Amboy, that he next proceeded to Falmouth, (Jamaica,) and from thence to the Havanna, and that he had brought the crew all back with him in a state of health; that they had all been several voyages to the Havanna, some three, four, and five voyages, and were all well seasoned to the West India climate: he also acknowledged that *it was very sickly at the Havanna when he was there*. Upon questioning him relative to his vessel, he also very candidly stated, that his ballast had not been shifted from the time he left Amboy to this day. Such are the facts we have been enabled to obtain on this subject, and which we beg leave to present to the board without delay. As it has been made our duty to express an opinion of the nature and origin of the disease in question, we feel no hesitation in saying, first, that the disease, in our opinion, is that commonly known and described as the *yellow fever*; and secondly, that it has been satisfactorily traced to one of the two last

mentioned vessels, arriving from the West Indies, and that it has most probably been derived from the ship *Favourite*, from the *Havanna*, which is by all acknowledged to have been a sickly port at the time of her sailing. Nor do we conceive it to be an objection to the correctness of this opinion, that the crew remained healthy throughout the voyage, as it is also stated, that by the several voyages they had made to the *Havanna*, they had become seasoned to that climate. It will be readily recollected by the board, that a similar instance occurred in July, 1809, at which time two persons from this city worked on board the brig *Mary*, a vessel from the *Havanna*, then detained at the quarantine ground, and were seized with the yellow fever, of which they died in this city, although the crew of the same vessel had been in perfect health during the whole of her voyage.

We cannot conclude this communication without remarking, that Mr. Perrein, the collector at Amboy, and Dr. Manning, a physician of the same city, are entitled to our acknowledgments, for the very unreserved and candid manner in which they communicated to us the information they possessed relative to the subject of our inquiries.

We are, gentlemen, very respectfully,

Your humble servants,

DAVID HOSACK.

JOS. BAYLEY.

JOHN H. DOUGLASS.

New-York, September 18th, 1811.

To the President and Members of the Board of Health

Extract from the minutes,

J. MORTON, Sec'ry.

The Board of Health of Philadelphia have issued a proclamation, prohibiting all intercourse and communication between the city of Amboy and the city and county of Phila

delphia, on account of a pestilential disease prevailing in the former city. Persons, after leaving Amboy, must perform fourteen days quarantine before they can be admitted into Philadelphia.—*Public paper of September 20.*

Board of Health, September 24, 1811.

A report of Jacob Lewis, Esq. Recorder of the city of Amboy, dated 21st instant, was read, which stated, that there had been four deaths of the yellow fever in the said city, that no new cases had occurred since the 16th, and that all the sick were now convalescent.

September 27, 1811.

A letter from the Mayor of Amboy, to the Honourable De Witt Clinton, President of the Board of Health, together with an affidavit of James Seguine, were read, and directed to be entered on the minutes. They were as follows :

To De Witt Clinton, Mayor of the City of New-York,

SIR,

I have observed in the newspapers, your proclamation, prohibiting all intercourse between the cities of New-York and Perth Amboy ; also the report of the Committee appointed by the Board of Health, to investigate the nature and origin of the disease prevailing in this city. I had not the honour of seeing Doctors Bayley, Douglass, and Hosack, but approve very much of their report respecting the fever originating in one of the two mentioned vessels : more fully to prove this, I send you the affidavit of Captain James Seguine, who piloted the brig Ocean out of this port, on the 24th instant. Also, as it may be satisfactory to the citizens of New-York, I inform you, that the Resident Physician,

Nathaniel Manning, has reported to me, that there has been no new cases for two days past.

I am sir, your obedient humble servant,

JOHN ANGUS, Mayor.

Perth Amboy, September 26, 1811.

DEPOSITION.

James Seguire personally appeared before me, John Angus, Mayor of the city of Amboy, and deposed and said, that he was employed as Pilot on board the brig Ocean, Sutton, commander; that on the 24th of the present month, he piloted the said brig out of the port. Previous to leaving her, Captain Sutton, or the mate, gave permission to him (Seguire) to collect the coffee which was scattered in the bottom of the vessel, for which purpose he went below, when he immediately heard violent groaning by some sick person or persons: being alarmed, immediately repaired on deck to inquire into the cause, or whence came the groans, when he was answered by the crew, that it was the boy, who then lay sick in the steerage, and very far gone, upon which the deponent left the vessel without collecting the coffee.

JAMES SEGUIRE.

Perth Amboy, September 25, 1811.

AMBOY—*Report of the intendant Physician of that city, to the Corporation.*

September 29, 1811.

No new cases of yellow fever have occurred since last Monday week; one death yesterday; all others are entirely recovered, or are convalescent. We have had five deaths of decided cases of yellow fever; one doubtful; viz. James Compton, James Kearney, Joseph Compton, Miss Ann Taylor, and William Craig; Mrs. Crowel a doubtful case. We have no instance of any person taking the fever from those

they attended, except in that part of the town which became infected by the vessel that introduced the malady. The above vessel having sailed, and all others ordered off, no more cases are apprehended.

(Signed)

J. LEWIS, Recorder.

General MORTON, C. C.

October 10, 1811.

The President laid before the Board a letter from the Mayor of the city of Perth Amboy, in the following words.

“PERTH AMBOY, October 7, 1811.”

“SIR,

“I have the pleasure to inform you, that the fever which has been prevalent here, has subsided; no new case having occurred for fifteen days past, and no person being now sick with that complaint. The last report of the Physician is enclosed.

“I am respectfully, your’s, &c.

“JOHN ANGUS.”

The report enclosed was,

“Report for Saturday, October 5, 1811: Of the cases of malignant fever, every case subsided, and not necessary to report hereafter.

“NATHANIEL MANNING.

“Mr. JOHN ANGUS, Mayor of the city of Perth Amboy.”

Whereupon resolved, that it be recommended to his honour the Mayor, to issue his proclamation, restoring the intercourse between the two cities.

The Mayor accordingly issued a proclamation to that effect, on the 10th of October, 1812. 12



